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January 1998 Issue 190 £3.95
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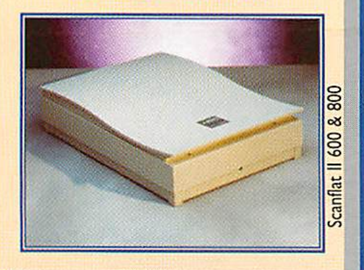


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SCANFLAT II SCSI SCANNER

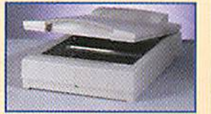
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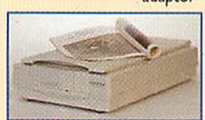
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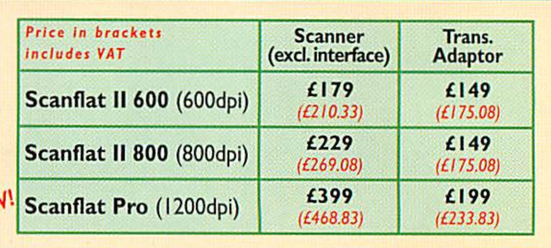


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Jaz


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Zip drive in case

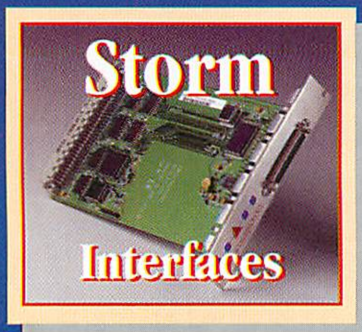
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Price in brackets includes VAT	Data transfer rate	Media capacity	Media price	Compatibility	Portable version (incl VAT)	Internal (bare drive) (incl VAT)	External (Combo Case) (incl VAT)
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Iomega Jaz*	up to 6.6 MB/sec	1GB	£69	n/a	£299* *(£351.33)*	£249 *(£292.58)*	£309 *(£363.08)*
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SyQuest EZFlyer*	up to 2.4 MB/sec	230MB	£18	EZ 135 media	£129* *(£151.58)*	-	-
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Next issue on sale 22 January 1998



0151-625 1006

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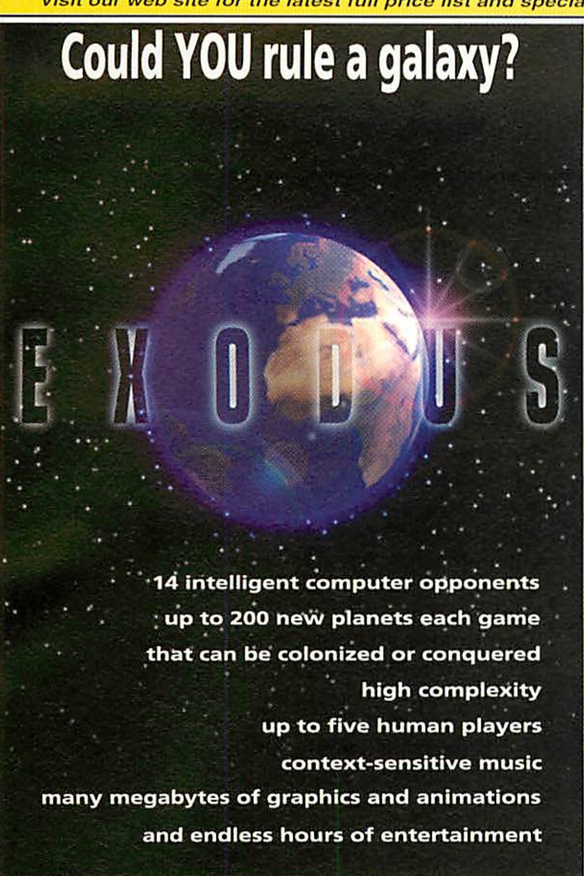
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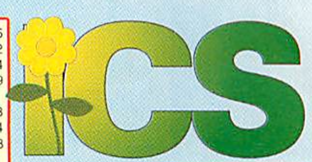


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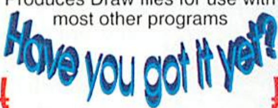
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You need to join Clan Acorn at £15 if you are not already a member. Offer expires 28th February 1998. Nintendo games may vary.

Acorn to take on the games market

According to a teasingly imprecise news item in Acorn's official newsletter, *Acorn Times*, you will soon be able to run the 'world's leading 16-bit games' on Acorn platforms, at speeds you've never seen before. The item stated: *"Our first announcement, scheduled for November, will enable you to choose from over 1,500 games written for one of the market-leading games machines. Others will follow."*

An *AU* source says some of these games were demonstrated to observant visitors at Acorn World. In fact *Acorn User* was accidentally told which 16-bit games platform is being lined up to do the deal with Acorn, but as these words are being written early in December and Acorn say the details are still embargoed, it seems the November schedule Acorn mentioned has slipped, so we can't tell you.

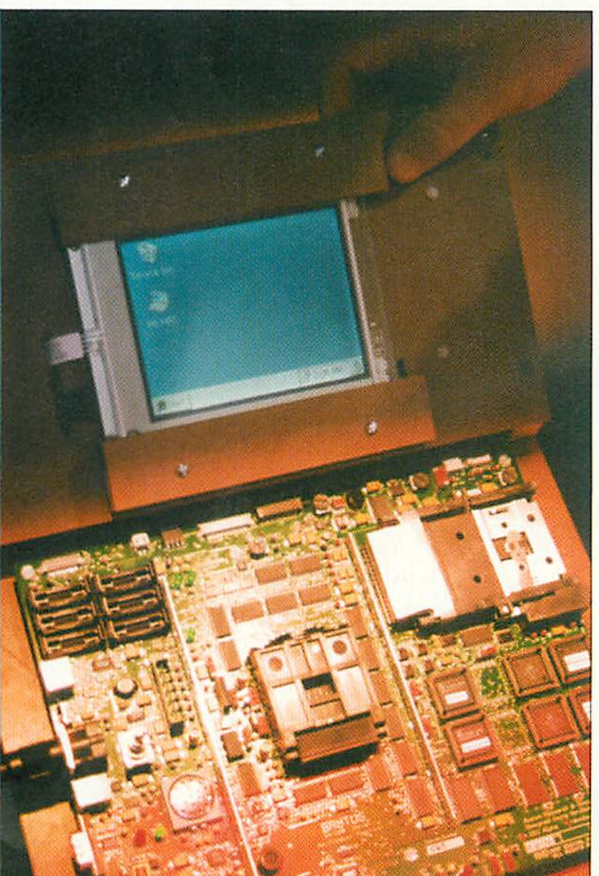


We're also told that the deal is primarily for the benefit of Acorn's NC offering, but there could be a spin-off for Risc PC owners if there is enough demand. Frankly, it's not that difficult to work out. Nintendo's 16-bit games console was a bit of a flop by their standards, as was the NEC console (never officially launched in the UK), Atari never got going properly with a 16-bit console, so that leaves...? No, Sony's PlayStation is 32-bit! The other one, yes!

Acorn also hints that one of the world's 'favourite multi-player games' will soon to be sending tremors through an NC near you. Actually, we don't know what the answer is to this particular riddle, though *Quake* is a popular multi-user game suitable for Internet hosting, so it would make sense.

StrongARM worries?

Last month we reported that Intel had agreed a deal to acquire Digital Semiconductor, including the latter's StrongARM processor, which is crucial to the future of Acorn and an increasing number of other computer companies. Digital developed the 'Strong' version of the ARM processor by licensing the core technology from ARM Ltd and endowing it with the advanced silicon process Digital had developed for their flagship Alpha 64-bit super RISC processor family.



The news of the Intel takeover was initially greeted with some nervousness by those in the Acorn camp, but after a bit of thought it seemed like a safe situation as Intel have not publicly announced an equivalent to the StrongARM family, and interest in StrongARM is growing fast.

However an editorial in the electronics publication, *EE Times*, has re-opened concerns that Intel are not interested in the long-term future of StrongARM. Part of the reasoning is that ARM Ltd are effectively co-owners of the technology and some StrongARM-based products, like NCs, compete with Intel-based products. *EE Times* also suggests that StrongARM overlaps with the embedded systems marketplace of Intel's i960 processor, which is popular with IO real time system developers who work with the Wind River Systems RTOS (real time operating system). On the other hand, *EE Times* points out that the ageing i960 processor is, technically speaking, no match for StrongARM in the long-term and Wind River have already ported their RTOS to StrongARM.

The thinking is that even if Intel have no interest in pursuing the fortunes of StrongARM, they will not pull the plug on signed and sealed contracts for their production and use by customers, so there is no immediate danger. However, without a swift signal from Intel regarding their StrongARM intentions, those developers expressing an interest in adopting StrongARM for the first time may well be frightened off.

Both Samsung and Mitsubishi have the technology to manufacture existing StrongARM chips, but the chip is now over two years old and has only had a minor tune-up from 200MHz to 233MHz during that time. If StrongARM obeys Moore's law of computer evolution, its performance should have doubled by now at the very least. Only Digital – or Intel – would have the ability and impetus to deliver next generation StrongARMs.

At the recent Comdex computer expo in Las Vegas, StrongARM was given a generous stage on the Digital exhibit with around a dozen Digital and third-party StrongARM based designs on display. This included a prototype Digital board running the newly ported Microsoft Windows CE operating system, Corel's new Video NC, Apple's Newton MessagePad 2000 and, of course, Acorn's CoNCord network computer.

Digital representatives at the show were bound by a regulatory gag pending the approval of the Intel takeover, however it was clear that there was great enthusiasm for the StrongARM technology and its prospects, given the opportunity to pursue them of course.

news



Xemplar's new image

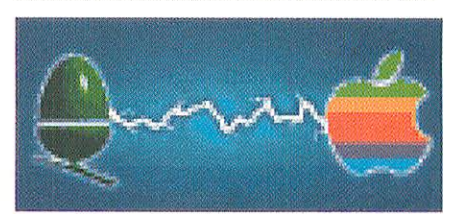
Xemplar are taking the radical decision to distance themselves from their parent companies, Apple and Acorn, by forming a new image in the education market which they hope will make the company as relevant to a school committed to Microsoft Windows and PCs as those using Acorns and Macs.

Xemplar are to become 'the education company,' rather than an allied enemy of PCs in schools. Xemplar's Dick Wallin explained: "We've very much played on the fact that we were linking Apple and Acorn's technologies, hence the lightning flash graphic which we have put on lots of our stuff. We have really promoted the Apple-ness and the Acorn-ness of our business. Over the last 18 months we have been doing a lot of work in developing the educational solutions which we said we were going to develop right at the beginning. It has become clearer to us that if we were to rely on our Acorn and Apple heritage only then we would rapidly disappear under the tide of Wintel which is currently sweeping the country."

Wallin revealed that while the primary sector remained healthy for Xemplar, Acorn's share of sales (not installed base – which is higher and more static) to the secondary market had slipped from 20 per cent to just 10 per cent. Corresponding sales of Apple Macs had netted just 12 per cent of market share, down from 15 per cent in the last year. Sales of Acorns into primary schools had dipped to just 30 per cent after fears that Acorn were abandoning RISC OS, but sales later recovered to 50 per cent.

Wallin added: "So there are a number of questions which this has raised for us. One of which was, should we become yet another Wintel company? And we felt that was not were our expertise lies. Our expertise is the interface between the technology and the teacher – unlike our parent companies who are really technology companies.

"We are very much more on the application side of things and we really understand the education side and therefore our USP



should be in 'the education company'. So we are now positioning ourselves and you will see during 1998 that the reference to an Apple and Acorn company – the Apple and Acorn logos – will disappear and we will become Xemplar in our own right, as an educational IT company. We will become, to all intents and purposes, platform agnostic."

Xemplar don't appear to be saying that PC hardware will be featured in equal prominence to Macs and Acorns in their future catalogue. Indeed, selling PCs is a low margin business. However, if a school needs PCs, Xemplar will do their best to meet that requirement. Much more importantly, Xemplar will have access to schools which would never have contemplated doing business with them before, to provide software, peripherals and other services.

Importantly, this will make Xemplar more competitive against the old enemy, RM Products. The 1998 Xemplar campaign, which starts at the BETT Show in January, includes an answer to RM's *Window Box* offering – a PC installed with dedicated educational software. This popular RM product will now have to compete against Apple and Acorn versions of a similar offering called *Toolbox*, of which there are variants for primary and secondary schools.

Xemplar are confident that their *Toolbox* family has been developed with the benefit of knowing about *Window Box's* advantages as well as failings. Xemplar are also bundling versions of the *Toolbox* which have been developed specifically for the NC, which is now on trial in several schools around the country.

Apple's Newton-based eMate portable school's computer is also proving to be very popular and work is carrying on apace to complete its RISC OS connectivity software. Xemplar are taking firm measures to meet the challenges of their market. Combining the armouries of Acorn and Apple to form Xemplar, it seems, was not enough. If you sell petrol, metaphorically speaking, you really want to supply all the cars out there, not just certain models. In a way, Xemplar have woken up to the fact that they can't rely on just Super Plus Unleaded – they need to cater for the Diesel market as well.

Tomorrow's World

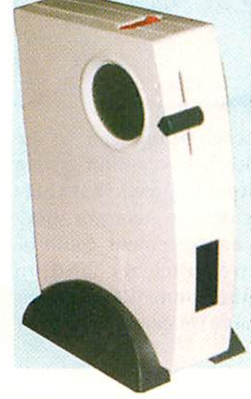
Acorn User reader, Simon Wyre, was rather put out that BBC TV's Tomorrow's World ran an item on Microsoft's WebTV initiative without reference to other comparable products, including those produced by Acorn. Much to his surprise, TW replied to his complaint delivered via e-mail and it is reproduced here:

"Thank you for your letter concerning the Tomorrow's World item on the Microsoft Home, broadcast on November 26th. You raise a valid point concerning the way in which we approached technologies being developed by Microsoft. In retrospect, I accept it would have been useful if we had pointed out some alternatives to Microsoft's products, particularly with regard to WebTV. In response to your point we are therefore adding some links to our website to help offer a more rounded picture of the alternatives on offer.

Thank you once again for taking the time to write in.

Yours sincerely, Jonathan Renouf, Programme Producer.

PS If you have access to cable TV, you might be interested to know that "Tomorrow's World Plus" – our extended version of the programme which is broadcast on the Horizons channel – has an extensive feedback slot, where we respond to letters and e-mails."



Corel's StrongARM NC

There has been much discussion about the rumoured Corel Java machine in Acorn-watching circles. At Comdex Fall in Las Vegas the Corel Video Network Computer, as it is officially called, was present in large numbers on the Corel stand.

As expected, the machine is StrongARM-based and represents serious competition to Acorn's own NCs. Inside the rather attractive vertical low footprint case is a StrongARM SA110 clocked at 233MHz. The hardware includes speakers, a microphone and inputs for add-on Internet phone and video conferencing accessories. 2Mb of on-board video memory is fitted and video capture and compression is built-in for multimedia functions, like video conferencing.

There was no sign of a smartcard reader on the machines we examined. The operating system is essentially Linux-based, but virtually everything running on top of the OS is Java-based. We were unable to find out the official price of the Corel VNC, but its cost is described as 'low'.



Seen at Comdex

Your news editor travels to the world's biggest computer trade show, Comdex, in the US every November to fulfil responsibilities outside of *Acorn User*. However, Comdex is increasingly a showcase for products of interest to *Acorn User* readers. As other news stories in this issue show, StrongARM is now a certain headline grabber at Comdex, however here is a round-up of interesting



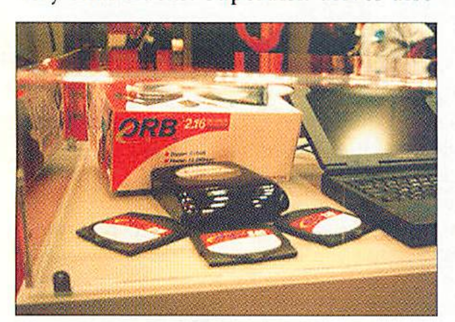
new products which have a high chance of finding their way to Acorn dealers in the not too distant future.

Last month we brought news of Syquest's new SparQ cut-price 1Gb removable hard drive system, slotting neatly in between the old 230Mb EZFlyer and 1.5Gb SyJet drives, but closer in price to the former. Both these products are already popular with Acorn users. At Comdex Syquest's SparQ glory was short-lived as a rival company, Castlewood, unveiled their faster and bigger capacity alternative called Orb.

This has 2.16Gb cartridges and uses advanced MR (magneto-resistive) head technology to pack more data onto a given space on the hard disc platter. Much to Syquest's dismay, the Orb offering is priced practically the same as the 1Gb SparQ.

Meanwhile, Comdex was the first big show where you could see production 120Mb 'floppy' disc – also called LS120 Superdisks – from a number companies, including Imation, which used to be the 3M group's division responsible for computer storage products. The Superdisk technology is familiar to some Acorn users – it's the successor to the 20Mb Floptical, which was pioneered by Iomega around five years ago.

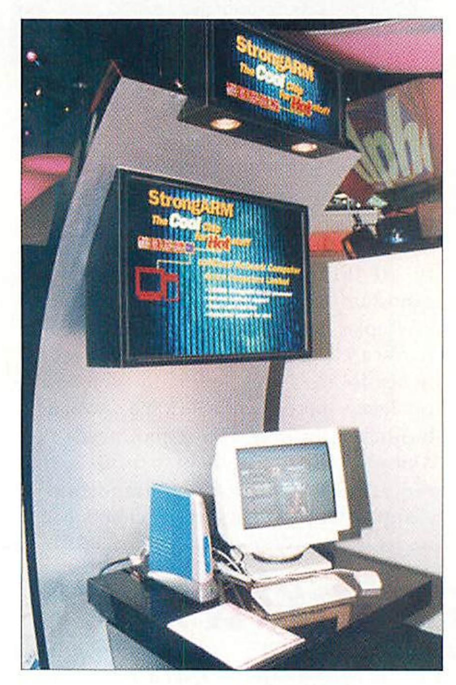
Like the Floptical, Superdisk drives use a laser-guided read/write head to reliably access magnetically encoded data stored on very slim tracks. Superdisk drives also



continue the Floptical tradition of being able to read and write conventional single and high density 3.5 inch floppy discs. Ironically, Iomega abandoned the Floptical technology, sold out and developed the highly successful Zip drive, which is not compatible with ordinary floppy discs.

At Comdex there is always a danger that your limelight will be stolen by someone else and for the Superdisk there was a rude challenge from a group of Japanese giants header by Sony, Fuji and Alps, among others. They were showing their 200Mb HiFD 'floppy' disc challenger'.

HiFD, like Superdisk drives, is compatible with conventional floppies. Apparently HiFD retains the advantages of Superdisk, includ-



ing low power consumption and compact size, with the added advantages of greater storage capacity and faster data transfer rates. The HiFD demo included digital video streaming from a HiFD drive in real time – it could be ideal for Replay movies and possibly MPEG.

Back to Iomega, who had a new version of the Zip drive which is both parallel port and SCSI compatible along with a 2Gb version of the Jaz removable hard drive. Iomega also showed a dinky two inch 40Mb 'Clik' removable hard disc cartridge which is so tiny it could find its way into mobile phones and palmtop computers.

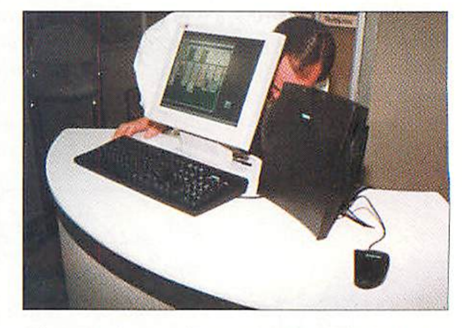
One little gadget which generated a lot of comment at Comdex this year was the 'FEELit' mouse from Immersion Corporation. It's not April 1st so you can take our word for it – this is a mouse which provides sensory feedback. Expensive games joysticks already employ a similar sensation called force feedback. In fact Immersion Corp. were one of the first joystick manufacturers to feature force feedback.

Instead of the device being completely passive and moving where you point it, the user can experience feedback motion. With the 'FEELit' mouse you can apparently 'feel' an icon's motion as it is released in a drag and drop operation, for example. If you are using a drawing package which has a rubber-band function, the more you stretch the graphic, the more the mouse will resist your hand's movement.

Moving the mouse over a contour map on the screen will also deliver a suitable 'feel' of the map's surface. The force feedback isn't just one-way – if you move the mouse to scroll a window, by pressing a bit harder on the mouse you can speed up the scrolling – a bit like squeezing a throttle. The FEELit mouse is priced $139 in the US (£85) and dedicated software support is required.

Finally, WebSonic, a division of Viewsonic Corporation, was launched at Comdex. WebSonic uses StrongARM as the basis for their D5.0 'universal corporate communicator' – a thin client terminal to you and me. While WebSonic's product owes nothing to Acorn in terms of its design, bar the history of the StrongARM, David Brooks, president and CEO of WebSonic, told us that his and Acorn's paths had crossed in the past. Brooks, a fervent believer in the StrongARM platform, used to work at Wyse Technology – another major player in the network terminal market. Wyse experimented with ARM-based terminals but has yet to produce a successful ARM-based product.

Unfortunately, Brooks' experience of Acorn was borne of the 'old' company, pre-reorganisation and he complained that Acorn back then was very reluctant to get involved in projects like his. Of course, it couldn't be more different at Acorn these days and we made sure he understood this.



The D5.0 product is scheduled to be enhanced with a speech recognition system during 1998 and Brooks agreed that there was potential to license it to Acorn or third-party developers if an agreement could be reached. That's two voice recognition systems headed for the StrongARM platform if you include last month's news of the ETRI project in Korea.



Senior vacancies filled at Acorn

In what Acorn say is a re-affirmation of their commitment to developing and licensing their technologies into the millennium, two senior management appointments have been made.

The first is Stan Boland, 37 and married with two daughters, who has been appointed as Finance Director. Boland joins Acorn from ICL and was present to witness the Acorn community first hand at the recent Acorn World show. Graham Dodgson, married with one daughter, has been appointed Senior Vice President, Sales and Marketing. This is widely regarded as the most challenging position within Acorn, which has had a chequered history when it comes to marketing success. Dodgson's CV includes spells at Microvitec and Gemstar, the company which sells the TV listings decoders.

"These appointments to my management team give Acorn a wealth of experience on which to continue to build a solid business," commented David Lee, Acorn's managing director. He added: "Business developments in our interactive multimedia markets continue apace and our technologies are being deployed by companies in the USA, Europe and Asia. The technologies under development will provide Acorn with many opportunities over the next three years and with a full-strength management team in place, we are ideally positioned to capitalise on them."

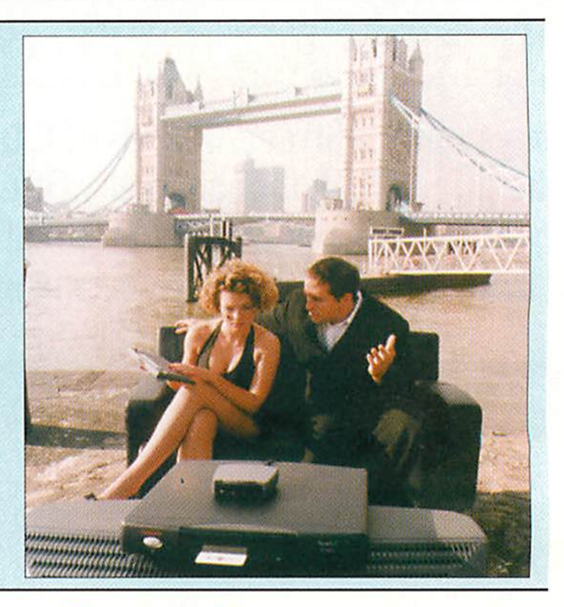
Acorn have made many such promises in the past. With all the restructuring the company have recently undergone, perhaps Acorn have never been so well positioned as they are now to at last fulfil those promises.

Have NC, will surf

Acorn decided to make the most of a recent MORI poll which revealed that, IT-wise, Britain is a divided nation of haves and have-nots. The report says that 40 per cent of Britons do not use new technology and almost half of all adults questioned felt they were falling behind in the IT skills race. Acorn lay the blame for these pessimistic statistics fairly and squarely at the door of the PC industry.

In other words, PCs are too expensive for many to buy and once you have scrimped and saved to buy one, within months it is out-of-date. Acorn points out that their NCs start at under £300, compared to £1,000 typically for a PC and we all know that Acorn's technology obsolescence cycle is far less frequent than that of the PC.

The message is clear – or is it? The Acorn publicity photo – apparently riding off the back of this year's hit movie, *Men in Black*, is mildly amusing, but exactly how it ties in to the MORI report defeated us. And the remote control will be no use with the infra-red receiver pointing the wrong way! Nice picture of Tower Bridge though...



Infra-red keyboards for the Risc PC

An update to Stuart Tyrrell Developments' PS/2 to Acorn mouse converter, PS2Mouse, allows Risc PC owners to use the infra-red keyboard with internal trackball, as used with NCs like Netproducts/Sejin.

PS2Mouse offers better support for mice which do not adhere strictly to the PS/2 protocol. There is enhanced support for PC 2-button mice. For example, the buttons may be changed to act as Select and Menu and two buttons being pressed together may be used to emulate a third button. You also get configurable acceleration, left/right "handedness", button-remapping, support for touch-pad "tap-clicks" etc.

Free updates, if required, are available to existing PS2Mouse users. Stuart Tyrrell Developments is also looking to supply Netproducts keyboard directly. PS2Mouse is priced £24.95 inc. P&P.

Contact Stuart Tyrrell Developments: PO Box 183 Oldham OL2 8FB, Orange tel: 0976 255 256 E-mail: info@stdevel.demon.co.uk WWW: http://www.stdevel.demon.co.uk

Free Java compiler

Acorn hackers can now get their hands on a native RISC OS Java compiler. Even better, it's free.

What you will get is Release 1.0 of the RISC OS port of version 1.0 of guavac, the GNU Java compiler which was ported by Peter Naulls, who hails from New Zealand.

Guavac is just a Java compiler, so it's fine for developing Java applets and general experimentation, but no run-time environment is supplied. You should theoretically be able to run programs compiled from Guavac on any Java run-time system, including Acorn's RISCafé, or the free beta version of *Chockcino* (pronounced chock-cheeno) the independent Java interpreter which was also ported by Peter Naulls to RISC OS. The final version of *Chockcino* will be marketed commercially for RISC OS customers by Warm Silence Software. Simple Java applets will also run on Web browsers which support Java.





The arrival of guavac is potentially significant because it could open up opportunities for any aspiring Java programmer who has an Acorn machine but no access to alternative Java development tools, say on a PC.

Guavac for RISC OS can be downloaded from the Web at: http://chocky.home.ml.org/java/guavac



news

Avoiding RSI in kids

Repetitive Strain Injury, or RSI, is a debilitating condition associated with long-term use of computer keyboards and mice. There is growing evidence that children, not just adults, are at risk from RSI as the spread of computers in schools and at home continues.

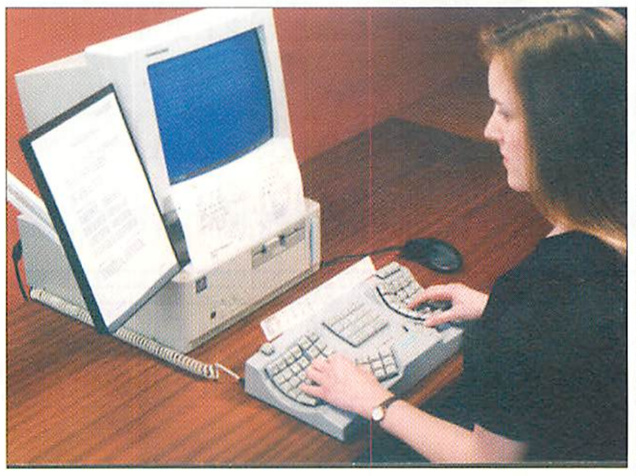
Once you have been diagnosed with RSI it can be very difficult to treat. The best tactic is to avoid it in the first place. With so many children using Acorn computers in schools, inevitably any publicity about RSI will touch the Acorn community.

Last November, the Trade Union Council (TUC) launched the Body Action Campaign which aims to teach children good practice when using computers in order to avoid RSI. This necessitates good posture and the correct typing technique, plus other tips, like frequent breaks and awareness of early strain.

One solution is to use a special keyboard, especially if you are already experiencing symptoms of RSI. Keyboards like those from specialist manufacturer PCD Maltron of East Molesey, Surrey, are specially sculpted to work more naturally with a typist's fingers, hands and wrists. This lessens muscle tension and so helps avoid the risk of RSI.

PCD Maltron keyboards are more expensive than their conventional counterparts, but the company reports encouraging results from RSI-afflicted customers. PCD Maltron keyboards are PC-compatible and so will work with current Acorn computers.

PCD Maltron can be contacted at tel/fax: 0181-398 3265, e-mail: sales@maltron.com or on the Web at http://www.maltron.com



New products/upgrades

Product	New features/product details	Price	Contact
Mathematics Dictionary	* Easy-to-use, interactive multi-media reference CD-ROM * Helps children grasp mathematical concepts, their meanings and derivations * Aimed at 8-13 year olds, at KS2 and above	£35 + VAT Discounts for multiple purchases	Produced by PolyDron. Available from major educational suppliers including Xemplar
Publish Art 3 artwork list	* Printed list of the artwork on the SmartDTP CD-ROM	£8 inc p&p Cheques payable to Flipside	Flipside Tel: 01803 863863 (9am - 5.30pm weekdays)
New HolyBible modules	* The New American Standard Bible (requires HolyBible 1.75 or later) * The New Bible Commentary (requires HolyBible 1.69 or later)	NASB £25 + VAT NBC £30 + VAT Site licences available for educ sites at double the single-user price.	ExpLAN Computers Ltd Tel: 01822 613868
Places of Worship	* 3D rotatable clip art suitable for investigating the design and layout of church buildings * Example worksheets and exercises included * Can be incorporated in written reports or posters with correct scaling	£30 + VAT (includes educational site licence)	ExpLAN Computers Ltd Tel: 01822 613868
WimpBasic update	* WB application remains at 1.10 but the WB Modules now at v1.12 * Updates for full app or just modules on WB website * If you have v1.10 just download the Module updater		Clares Micro Supplies Tel: 01606 48511 WimpBasic website: http://www.treknet.is/wb/
Map Detectives	* Triple format CD-ROM * Teaches geography, mapping and compass skills in an original way	£44.95 (single user) £89.95 (Primary site licence) £134.95 (Secondary site licence) All prices ex VAT	Sherston Software Tel: 01666 840433
Psion5 in easy steps book	* Written in plain English by Geoff Preston - AU Education Editor * Easy to follow, jargon-free book	£8.99 ISBN 1-874029-87-3	Computer Step Tel: 01926 817999

Christmas cheer!

Participating Acorn dealers have been armed with a potent sales incentive this Christmas. From December 1 until February 28, prospective Risc PC or A7000+ buyers are being lured to sign on the dotted line with the promise of a Nintendo 64 games console and two games cartridges thrown in free.

Alternatively, you can choose a MIDI card, *MidiWorks* software and a Casio electronic music keyboard. Top-end Risc PCs can earn extra value freebies in the form of vouchers for *OmniClient II* single user, Java Virtual Machine 1.0.2, *Macromedia Director 4.0*, Acorn's HTML 3.2 Web browser or Acorn's Mail and News clients. All of these titles will become available in Q1 1998.

ARMs everywhere

You've got an ARM in your desktop computer, you can have one in your pocket computer and soon you can have one in your mobile phone. VLSI Technology, one of the shareholders who, along with Acorn and Apple, jointly own ARM Ltd, have announced their OneC GSM single-chip platform for next-generation GSM digital cellular phones.

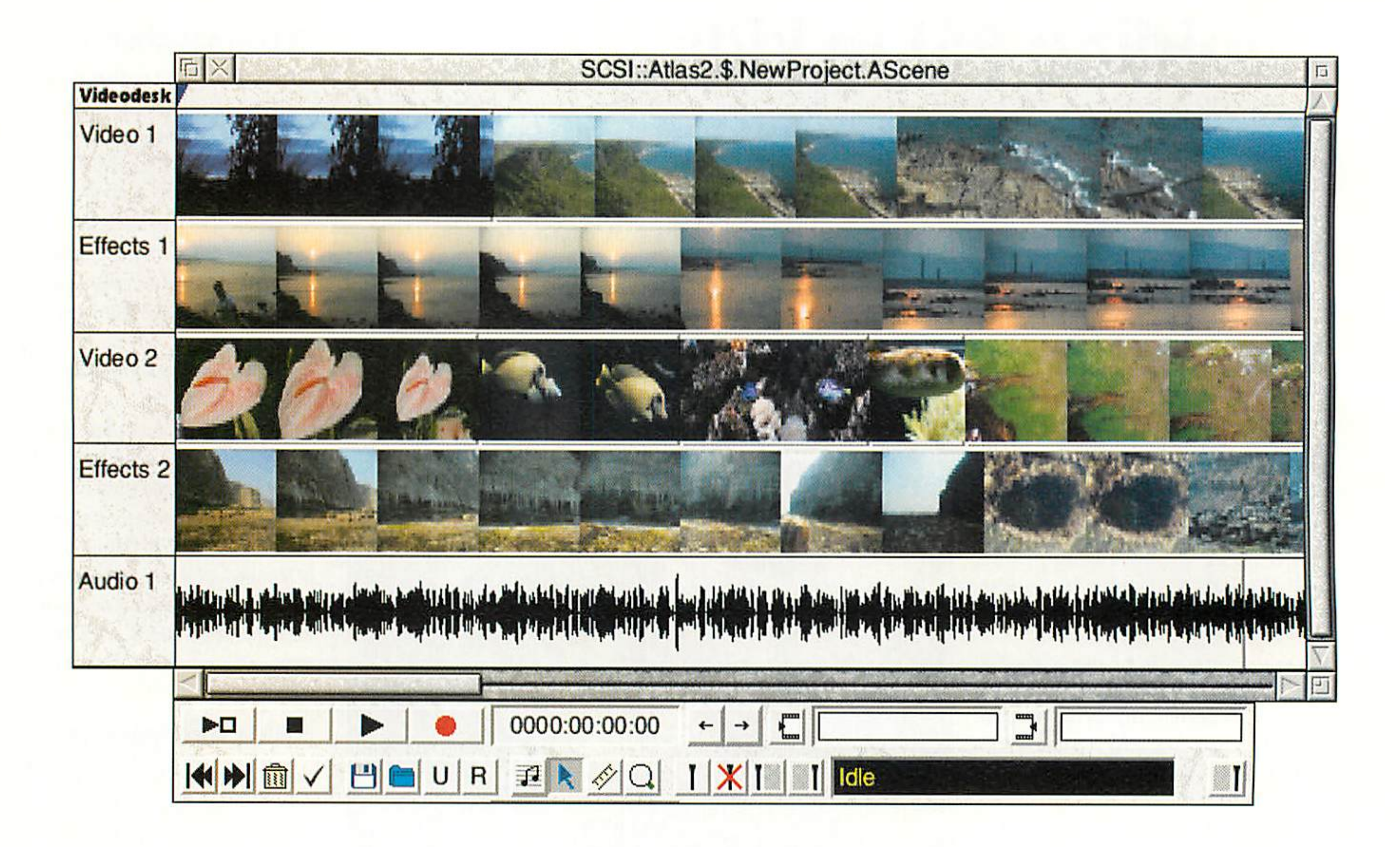
VLSI boasts the chip, which incorporates a highly integrated ARM processor, will be able to offer up to 500 hours of standby time and more than seven hours of continuous talk time. That's a factor of several times better than the best GSM phones on the market today. Not only does the chip manage power consumption, but it deals with the radio module, the LCD display, SIM card interface, infra-red receiver, multiple data interfaces and the keyboard. No customers were mentioned by VLSI at the launch, but we'll be keeping an eye out for any further news.

Contacting me

You can contact the news page by writing to me Ian Burley at the usual Acorn User address or by e-mail: aunews@idg.co.uk

Videodesk

Full-frame, True-Colour, Non-Linear Video Editing System.



Videodesk

- Frame accurate editing.
- Separate audio and video tracks.
- Instant playback of edits.
- Effects include mix, fade and wipes etc.
- Multi-level undo and redo.
- User selectable quality factor up to S-VHS*.
- Composite and S-Video inputs and outputs.
- Resolution of up to 768 pixels x 576 lines.
- 50 fields per second capture and playback.
- 24 bit colour range.
- 16 bit stereo inputs and outputs.
- Audio sampling up to CD and DAT rates.
- Direct-to-disc recording.
- Built-in hardware Moving JPEG (MJPEG) Codec.
- Contrast, Brightness and Saturation adjustment.

Videodesk is a significant advance in video editing for Acorn machines. It allows full-size, full-colour and full-motion video to be compressed to disc in real-time using MJPEG hardware. The compressed data can be edited frame accurately and output back to video. Unlike tape-based editing systems there is no generation loss or waiting for tapes to rewind.

Complete video editing software is supplied as standard, which is sophisticated, flexible and simple-to-use. Editing is done on a multi-track time-line with separate audio and video tracks. Effects are generated digitally and include mixes, wipes and fades. Sequences of clips can be played back continuously without waiting for them to be assembled into a single file. So there is no waiting to preview an edit and disc space is not wasted. **RiscTV** is supported for real-time desktop display up to full-screen size.

Videodesk is available now direct from Irlam Instruments Ltd.





Irlam Instruments Ltd, Brunel Institute for Bioengineering, Brunel University, Uxbridge, Middlesex, UB8 3PH. Tel/Fax 01895 811401. Email: sales@irlam.co.uk
Website: www.irlam-instruments.co.uk

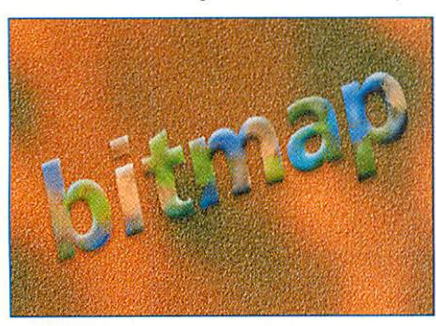
Please note: Videodesk requires a RISC PC, large fast hard disc and 8Mb RAM minimum. A StrongARM processor is recommended. Check suitability for your computer before ordering. 1 years guarantee. E & OE.
*To obtain good quality video requires storage of around 1.5Mb per second (5.4Gb per hour).





Fonts

The difference between a good design and a brilliant one often lies in the choice of font and, more importantly, how you manipulate the text into artwork. Reviewed in this month's *Acorn User* are two of the best font collections on the platform but once you



have gone through the difficult task of electing the typeface of choice, with or without the aid of a font management application, most users find it hard to do anything other than resize and colour their text.

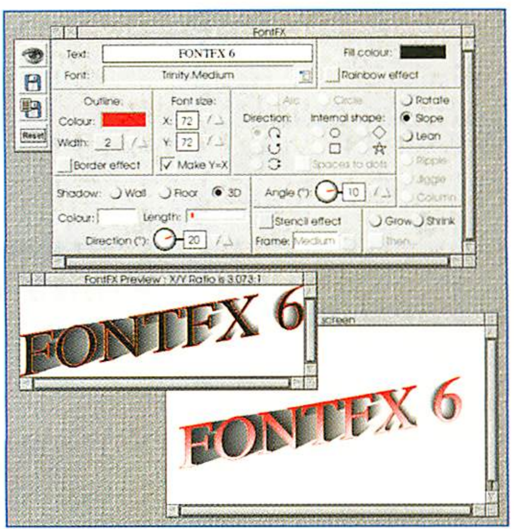
Both 2D and 3D graphics packages offer myraid ways of stylising and customising text. One of my personal favourite applications for text effects is *Photodesk*. Text or vector files like *Draw* and *ArtWorks* can be seamlessly loaded as scaleable objects and then drawn into an alpha channel as a mask. The text mask can be inverted and used as a stencil over background artwork to produce subtle and stunning lettering.

With vector packages like *ArtWorks*, *Vector* and *DrawWorks* you cannot achieve such characteristically bitmapped effects as with a painting programs, but you do have the advantage of retaining your mutated words in scaleable, rotatable and undoable form. Vector packages are ideal for putting text on curves, scaling, squashing and rotating. The hybrid vector-bitmap program *Compo* (from Clares) provides some of the text manipulation and editing facilites of vector packages while rendering the text onto the canvas as a bitmap which can be filled, shaded, shadowed or given transparency.

3D programs like *TopModel* and *DaVinci* play a specialised role, but the unique ability of such applications to build lettering out of natural materials and texture, illuminate and shade the objects can be put to brilliant effect in graphic design.

However, for many users all that's needed is a program which does not rely on mastery of abstract tools in myriad art packages to create the desired effect, and there exists just such a program.





The little known *Font FX* application published by The Datastore, comes on one disc, has a lovely, intuitive user interface and swiftly produces its results. Described as 'font manipulation' software, version 6 of this longstanding project now has 3D extrusion, grow and shrink, a new toolbox and myriad improvements and extensions to older tools. It may not realise the typography dreams of a professional artist but even for this level of graphics user, such software would certainly make many of the bridges between typing the letters on the keyboard and viewing the final masterpiece much easier to cross.

Picture of the month

Michael Bradbury is this month's winner with an *ArtWorks* graphic of a Formula One style car which took six months of on and off work to achieve the final result. Bearing in mind that Michael was a complete novice to the package, this is a fine effort and uses most of *ArtWorks'* best effects.

Keep the entries coming in and remember that the competition is open to DTP and website graphics also.



A3 flatbed scanner from Epson

Finally, an affordable A3 flatbed scanner has hit the market. Epson, currently on a roll with their fantastic inkjet colour printers, have recently not received as much attention for their scanning devices as in previous years. The GT-12000 is an A3, single pass, flatbed scanner. I have not seen any imagery scanned using the device but the technical specification in relation to the sub-£2000 recommended retail price is ground-breaking.

If the past is anything to go by, expect to see box-shifters asking 25 per cent lower than the RRP. Full A4, 300dpi colour scans in 30 seconds, 36-bit colour depth, 800x1200dpi optical resolution and tonal sensitivity of 3.3D are more fitting for a scanner two to three times the price. I hope that Irlam Instruments historic support for the Epson range of scanners is soon extended to this device in the near future.

Contacting me

You can contact the graphics and DTP page by writing to me, Jack Kreindler, at *Acorn User*, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to augrafix@idg.co.uk.

Showroom open Mon-Sat 10-18.00 hrs (All prices INCLUDE VAT) Carriage not included

CD-ROM Drives

Multi-Session, PhotoCD, CD-DA, White & Green Book compatible. SCSI drives require SCSI card withCDFS>2.20
Carriage: a=£2, b=£6, c=£8

New

Internal CD-ROM Drives

Panasonic 24xCD **ATAPI**	£80c
ATAPI Cable & Fitting Kit	£10a

Above drives are compatible with RiscPC Computers with RiscOS 3.60 or greater and all A7000 Computers.

Sony 2x CD **SCSI** 275ms	£80c
Pioneer 12x CD **SCSI** 130ms	£Callc

External CD-ROM Drives New

Panasonic 24xCD **ATAPI**	£170c
- suitable for Simtec IDE interface	
Sony 2x CD **SCSI** 275ms	£135c
Pioneer 12x CD **SCSI** 130ms	£Callc

TopicART CD £10

This CD-ROM contains over 2000 ClipArt files, each in Draw, ArtWorks & CorelDraw3.0 EPS formats. The CD also includes high quality Replay Movies & other demos. Site Licence is included.



Hard Discs

New

Carr.: a=£2, b=£6, c=£8
NEW!! Simtec IDE Interface £69
New High performance IDE/ATAPI interface for all RiscOS Computers from A3000 to RiscPC (specify when ordering). Supports up to 4 IDE/ATAPI devices including ATAPI CD-ROM Drives.

3½" Hard Drives	IDE	SCSI
IBM 540Mb	-	£150b
Quantum 2.1Gb	£130b	£Callb
Quantum 4Gb	£215b	£Callb

Syquest Removable SCSI Drives

EZ230 Ext Drive	£160c	EZ230Mb Cartr.	£21a
EZ135Mb Cartr.	£20a	270Mb Cartridge	£40a

Hard Disc Interfaces/Accessories

IDE interface	£69b	50-50C SCSI Cble	£12a
Morley Uncached	£100b	25D-50C SCSI Cbl	£12a
Morley Cached	£135b	SCSI2-50C Cable	£18a
Cumana SCSI II	£155b	SCSI2-25D cable	£18a
		50IDC 4-way SCSI	£12a
External case/psu	£90c	50C Terminator	£12a
2nd IDE Drive Kit	£15a	50HPC Terminator	£15a

zip/jaz Drives

New

Now include our RiscOS JazZip tools (£15 if purchased separately)

- zip & jaz Drives work just like hard drives except they are removeable, giving instant access to files
- 100Mb discs for zip & 1Gb discs for jaz drives.
- Data transfer speeds up to 1Mb/s for zip drives & >5.5Mb/s for jaz drives - ideal for backup up.
- Each drive comes with 1 year warr. and a disc.
- SCSI drives require a SCSI card that is suitable for removeable devices.

Internal SCSI zip drive	**£120c**
External SCSI zip drive	**£120c**
External Parallel zip drive	**£120c**
- add £29 for RiscOS Parallel Driv'r	
Single 100Mb zip Cartridge	£13a
Pack of 5 zip Cartridges	£50b
Internal 1Gb jaz drive (3½")	**£240c**
External 1Gb jaz drive	**£320c**
Single 1Gb jaz cartridge	£70a

Carriage: a = £2, b = £6, c = £8, d = £10

JazZip Tools

New

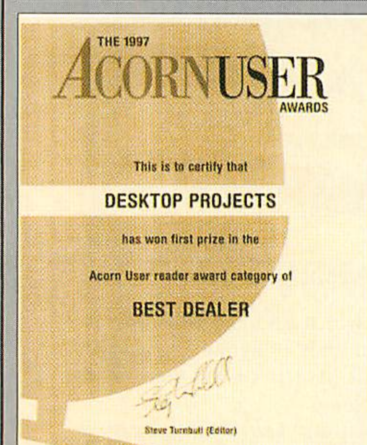
The ultimate utility for SCSI or Parallel Iomega Zip/Jaz Drives

£15a Inc VAT

(free when purchased with a drive)

JazZip provides you with a complete set of RiscOS tools for Jaz/Zip drives which are equivalent to those provided with the PC DOS utilities that are provided with Iomega drives. Requires a driver for parallel use. Features include;

- Password protection of discs using the standard Iomega protection features which are compatible across RiscOS, PC and Mac platforms.
- Lock/Unlock zip/jaz discs without passwords.
- Lock/Unlock zip/jaz discs with passwords.
- Unlock zip/jaz discs until next ejected from drive.
- Low Level format zip/jaz discs.
- Initialise zip/jaz discs for RiscOS.
- Initialise zip/jaz discs for DOS/Windows.
- Unprotect the Tools disc provided with drives to allow them to be reformatted/Initialised for Acorn
- Compatible with IZipFS, Morley, Cumana, VTi, PowerTec SCSI. Other support to be verified.



Xmas Offer

Buy a RiscPC or A7000+ between 1st December 1997 & 28th February 1998 and claim one of the following free of charge.

Nintendo 64 games console with two top games

OR

A Midi Card, MidiWorks softw., Casio Keyboard & backplane.

• OFFER IS ONLY OPEN TO CLAN MEMBERS – £15 TO JOIN.

RiscOS Computer Systems

1yr warr. **Carriage included on computers.** All machines are single slice. Backplane fitted to 10M RiscPC only.
See adjacent for details of Special Xmas Offers on Computers
233MHz StrongARM now fitted to all RiscPC Computers.

Computer Model with	14" (ADI)	17"(8617)	No Monitor
A7000+ 8MHD1.2Gb	£950	£1290	£810
A7000+ 8MHD1.2Gb+24xCD	£1020	£1360	£890
RiscPC StrongARM 4MHD1.2Gb	£1240	£1580	£1100
RiscPC StrongARM 4MHD1.2Gb+24xCD	£1310	£1650	£1170
RiscPC StrongARM 10MHD1.2Gb	£1540	£1880	£1400
RiscPC StrongARM 10MHD1.2Gb+24xCD	£1610	£1950	£1470

The 10M RiscPC includes Acorn's J233 Internet software pack - (available ~spring 98)
NEW!! RiscPC's are now available with 15" iiyama Monitors
Add £95 to 14" (ADI) prices for iiyama MF-8515G 15" Monitor.
Add £95 to 17" prices for iiyama MT-9017E instead of MF-8617E.
20/20 Finance on Acorn computers - ~20% deposit & 20 interest free monthly payments. Loans from £700(min) - £3000. Subject to status.
233MHz StrongARM Upgrades with RiscOS3.7 £275

Merry Christmas & A Happy New Year to All, especially to our Customers

RiscPC PC Cards

A1 5x86-100 (512kb)	£370b
above price includes PC Pro	
Acorn 586-100 (256kb)	£350c
PC Pro (without PCExchange)	£38a
Windows '95 CD (Full)	£90a

The above can be installed directly from CD without previously installing DOS or Windows.

RiscPC Upgrades

233MHz StrongARM	£275b
2nd Slice with PSU	£116c
2nd Slice without PSU	£90c
YES 16 bit Mozart Card	£70a

Memory

Following prices strictly whilst stocks last.

RiscPC/A7000 SIMMS

4Mb	£20a	8Mb	£28a
16Mb	£48a	32Mb	£75a

RiscPC VRAM

1Mb 2nd user	£40a	2Mb	£88a
1-2Mb u/g (exchange)			£70a

Call for details of memory for other models.

Monitors (Carriage £10)

Older computers will require an adaptor £12
Hi-Spec 14" Monitor £140
FST, 0.28" dp, 1024x768, 30-54kHz & pre-sets.
Ilyama MF-8515G 15" £235
High spec FST Tube with 0.28" dot pitch
Ilyama MF-8617E 17" £480
High spec FST Tube with 0.26" dot pitch
Ilyama MT-9017E 17" £530
Very High spec Diamondtron tube, 0.25" stripe

Printers (Carriage £8)

Canon BJC-4300	£195
Canon BJC-4550 (A3)	£255
Canon BJC-5500 (A2)	£590
Canon BJC-620 (720dpi)	£240
Epson 400 (720dpi, 3ppm)	£190
Epson 600 (720dpi, 4ppm)	£275
Epson 800 (1440dpi, 7ppm)	£390
HP LaserJets 6P	£585

Add £47 to above printers for TurboDriver

Hard Cards/Multi-Pods

See top for other hard discs. Carriage £8
A3000/A3010 Hard Cards
340Mb or 420Mb £150b

Portable Computers

Carriage: a=£2, b=£6, c=£8

Pocket Book II (1Mb)	£305b
NEW Psion Series 5	
- includes PsiWin Link	
Psion 5 4Mb RAM	£430c
Psion 5 8Mb RAM	£480c
Psion 3c(backlit) 2Mb-	£325b
AutoRoute Express	**£60a**

- one of the best packages for the PB/3a

A-Link	£59a	Mac Serial Link	£50a
Parallel Link	£34a	PsiWin PC Link	£80b
3/3a Mains Adap.	£18a	5 Mains Adaptor	£38a

Hardware Upgrades

24i16 Card (1Mb)	£450b
DMI-50 Dual Midi Card	£138b
Dual Serial Card	£104b
FPA for 25MHz ARM3	£67a
Joystick I/F (Not RiscPC)	£30a
Logitech Mouse (Acorn)	£26a
Movie Magic (1 only)	£199b
- Includes two VideoCD films	
RiscTV Card (Irlam)	£265b
RiscTV Teletext option	£45a
Scart Cable (9 or 15 pin)	£12a
Serial Upgrade (A3000)	£27a
2 x 100W Speakers	£25c
Videodesk (Irlam)	£1165b

Scanners (Carriage £8)

ScanLight Video 256 £199
- above is suitable for A3-A4k

Epson Colour Scanners
Include !TWAIN & ImageMaster for RiscOS. Bundles include CorelPaint & OCR software for PC's/PC Cards and approp PC interface card.

GTx-5000 Para bundle	£239
GTx-5500 SCSI bundle	£300
GTx-8500 Para bundle	£525
GTx-8500 SCSI bundle	£550
GTx-9500 Para bundle	£620
GTx-9500 SCSI bundle	£660

I³ Networking (Carr. £6)

A30X0 EtherLan 102	£130
Archi EtherLan 514	£130
RPC/A7k EtherLan 602	£110

Add £17 to above prices for Access+.

Modems (Carriage £8)

33.6 FLASH Sportster £149
Flash upgradeable to 56kbs
Modems come with a 9-25 PC wired cable. A3000/Archi require an Archi wired cable.

ANT Internet Suite II	£110a
ArcFax	£31a
Dual Serial Card	£104b

9-25 Archi or PC Wired Modem Cable £12ea.a
3-way Serial T-Switch (incl. comm. cable) £32b

Printer Consumables

Carriage: £2 for Cartridges, £8 for Toner

BJ-10 (BC-01)	£18	BJ-200 (BC-02)	£19
BJ-210 (BC-05)	£28	BJ-240 (BC-06)	£Call
BJC-600 Series		BJ-300 (BJI-642)	£16
BJI-201HCbk Black	£10	**BJC-4000 Series**	
BJI-201bk Black	£6	BCI-21Bk Black	£9
BJI-201C/M/Y	£8 ea.	BCI-21C Colour	£17
BJC-800		BC-20 Fast Black	£28
BJI-643 Black	£18	BC-22 Photo Cart	£34
BJI-643C/M/Y	£23 ea.	BC-22 Photo Kit	£39
HP DeskJets-500 ser.		**HP DeskJets 600 ser.**	
Mono	£23	Mono	£25
Colour	£25	Colour	£27

Epson Stylus Colour	Black £16/Colour £26
Epson Stylus Colour II	Black £20/Colour £26
C3903A Toner (LJ5P)	£64
EP-L Toner (LBP-4/HP LJIII)	£64
HP 92274A Toner (HP LJ4L)	£60
Swift24 Mono/Colour Ribbon	£8/£16

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Terms: All prices include VAT except books. Carriage is not included unless otherwise stated. Carriage charges apply to mainland UK (excluding remote areas, Scottish Highlands, Chann Isles, IOM), elsewhere at cost. Orders MUST be accompanied by a phone number. Prices and spec's subject to change without notification. Goods subject to availability. Goods not offered on trial basis. Restocking fee on non-faulty returns. Educ Inst official orders accepted. E&OE.

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To M66/M67
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A560 To A6
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Brinksway/Chestergate
ONE WAY
Wood St
ONE WAY
King St W

Books (No VAT)

Carriage: a=£2, b=£6, c=£8,

Acorn RISCOS3 PRM's	£99.95c
Acorn Volume 5a PRM	£29.75b
Acorn BBC Basic VI Guide	£19.95b
Acorn RiscPC Tech Ref Manual	£49.95c
ArtWorks Made Easy (Dabs)	£5.00a
Budget DTP (Dabs)	£5.00a
'C' A Dabhand Guide (Dabs)	£5.00b
RiscOS 3 First Steps (Dabs)	£5.00a
Wimp Programming for All (Beebug)	£10.95a

CD-ROM's (Carriage £2)

CD software for RiscOS

ArtWorks on CD (CC) (Carriage £6)	£90
Childrens Micropedia (Kingfisher)	£58
ClipArt CD 1/2 (CC)	£21 each
Dinosaurs (Microsoft)	£50
Dune II (Eclipse)	£41
Granny's Garden CD	£32
Guardians of the Greenwood	£51
Hutchinsons Encyclopedia 92 for RiscOS	£15
Hutchinsons Encyclopedia 97 for PC only	£15
Kiyeko	£Calla
Musical Instruments (MS)	£50
My 1st Incred. Amazing Dictionary (DK)	£38
PB Bears Birthday Party	£42
RiscDisc Vol 1 / 2 CD	£17 / £20
Simon the Sorcerer CD	£41
The Way Things Work (DK/IMS) **Limited**	£40
Ultimate Human Body (DK/IMS) **Limited**	£40

Applications

Carriage: a=£2, b=£6, c=£8

Acorn C/C++ (Acorn)	£229c
Advantage (Longman)	£51a
ANT Internet Suite (ANT)	£110a
ArcFax (David Pilling)	£31a
ArtWorks (CC) **Limited Offer**	£88b
Card Shop (Clares)	£23a
Chameleon 2 (4Mation)	£39a
Compression (CC)	£34a
DataPower (IOTA)	£105b
DaVinci (Spex)	£Calla
Disc Rescue 2 (Look)	£43a
Easy C++ (Beebug)	£102a
Eureka v3 (Longman)	£93b
FireWorkz Pro (Colton)	£134b
Font Directory2 (Look)	£42a
Font FX (DataStore)	£12a
Hatchback (4Mation)	£35a
HTML Edit 3 (R-Comp)	£47a
ImageFS2 (Alt Publ)	£43a
Image Outliner (IOTA)	£52a
Impression Style / Publisher	£80b / £125b
Impression Graphics Loaders (CC)	£40a
Impression Text Loaders (CC)	£30a
MacFS / MacFS Lite (CC)	£89a / £50a
Ovation Pro	£175c
PC Pro (without PCExchange)	£38a
PC Pro (with PCExchange)	£47a
PC Sound Professional (R-Comp)	£27a
Personal Accounts (Apr)	£40a
PhotoDesk Light (Spacetech)	£120b
PhotoDesk2 (Spacetech)	£245b
Prophet (Apricote)	£154b
Resultz (Colton)	£85a
Rhapsody (Clares) v3	£84a
S-Base2 Personal / Developer	£54c / £100c
ShapeFX (Datastore)	£12a
Sibelius Junior	£50a
Sibelius 6 / 7	£115b / £898b
Sleuth2 (Beebug)	£99a
SparkFS (Pilling)	£24a
Speech 2! (Superior)	£24a
StrongGuard (ARMClub)	£24a
Studio24 Pro (Pineapple)	£130b
Textures Professional (R-Comp)	£19a
Touch Type (IOTA)	£42a
Top Model 2 (Spacetech)	£149a
TurboDrivers Canon/HP or Epson(CC)	£47b
Vector (4Mation)	£72a
Web Designers Toolkit (R-Comp)	£28a

Games (Carriage £2)

Alone in the Dark (Krisalis)	£27
Birds of War (4D) 2Mb	£24
Break 147/Superpool	£24
Carnage Inc (4D)	£19
Chocks Compendium	£24
Crystal Maze (Sher)	£26
Cyber Chess (4D)	£24
Darkwood (Eclipse)	£23
Drifter (4D)	£30
Dune II (floppy) (Eclipse)	£30
Empire Soccer (Maglm)	£24
E-Type Compend. (4D)	£19
E-Type 2 (4D)	£24
Fire & Ice (Times Warner)	£22
Global Effect (Eclipse)	£30
GODS (Krisalis)	£10
Haunted House (4D) 2Mb	£19
Holed Out Compendium	£19
James Pond (Krisalis)	£10
Krisalis Collection	£25
Lotus Turbo Chall2 (Kris)	£22
Magic Pockets (Reneg)	£23
Play it again Sam 2/3	£22 each
Populous (Krisalis)	£25
Real McCoy 2/3/4/5	£24 each
Repton 3/4 (Superior)	£22 each
Sally & Wally (Oregan)	£21
Saloon Cars Deluxe (4D)	£24
Scrabble (US Gold)	£24
Simon the Sorcerer 2Mb	£31
Spobbleoid Fantasy (4D)	£24
Starfighter 3000 (Fednet)	£24
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10/10 Series £14 each
Early Essentials (over 7), English (6-16yrs), French (8-16yrs), Junior Essentials (5-11), Maths (Number) (6-16), Maths (Algebra) (6-16), Maths (Statistics) (6-16), Maths (Geom'y) (6-16), Spelling (over 9), Essential IT, Geog.,

Fun School 3 (under 5, 5-7, or over 7)	£20
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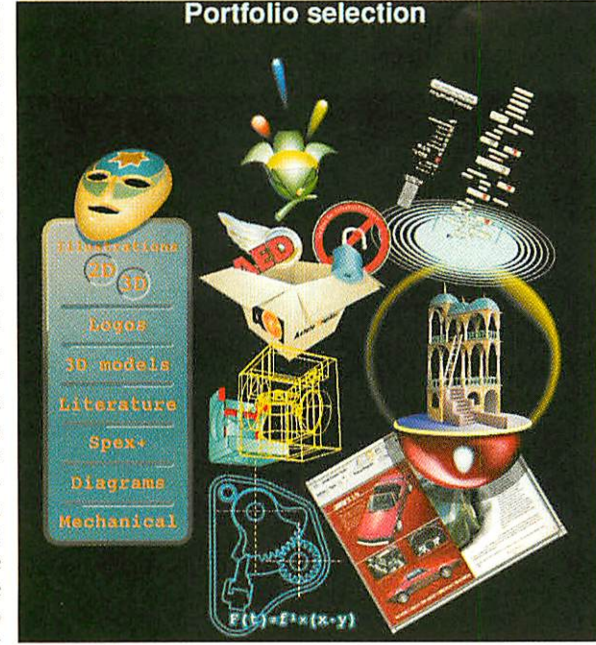
CENTRES OF TECHNOLOGY Acorn



JAN 98

Making art work

For a graphic designer who has only just discovered the Internet, it's obvious that Nicholas van der Walle is a fast learner. Examples of his crisp and elegant work can be seen on his Demon Internet website, which was designed and constructed using only a StrongARMed Risc PC running *Edit*, *ArtWorks*, *Change FSI* and *InterGIF6*, and uses neither HTML tables nor frames.



The website was primarily designed to show off his talents as a commercial artist, and Nick says that he had to learn all about the Internet and creating HTML files in a very short time in order to get the site up and running. He was reluctant to make that very first connection from modem to telephone socket, but once online, he was hooked.

With a background in engineering and a degree in automobile design, Nick has been working in the graphics business serving the mechanical, computer and publishing industries. His aim now is to offer a high-quality graphics service and to provide innovative and unique graphics software to the Acorn market.

The first software offering will be the *Phantasm* colour adjustment software for use with *ArtWorks*, which provides many new colour operations and some previously missing features such as contrast, brightness and saturation adjustment. A 'techniques forum' is planned for the website too, which is an idea that could be copied by other graphics software houses.

Acorn users who use *ArtWorks* for designing Web page images will find interest on this site in a series of on-line tutorials, the first of which demonstrates how to create icons for the desktop and Web pages. You can also read Nicholas van der Walle's graphics articles in this and issue of *Acorn User*. The Astute Graphics website can be found at http://www.astutegrfx.demon.co.uk/

The nearly free Net

Acornet, the Internet software suite for Acorn 32-bit computers, is a convenient collection of all the best freeware applications for Internet connectivity. Its *ArcWeb* browser and the other FreeNet FTP, E-mail, News and other clients are all available separately, but *Acornet* has the advantage of a simple set-up system for Net newcomers that does all the offputting fiddly bits for you.

Acornet contains information about many overseas and UK Internet Service Provider (ISPs), so recently when I was asked by an Arcade BBS user to help set it up for FREEdotNET, a new so-low-cost-it's-nearly-free ISP, I thought it would be a simple matter of adapting the details of another provider.

I dialled the access number with the terminal program *!Connector*, ready to note down the prompts and responses required to create a login script from the results. My simple terminal call was met by an unfamiliar maintenance login sequence quite different from that which I expected.

I spoke to The FreeDotNet Technical Support Manager Chris Hancock, who explained that FREEdotNET use an intelligent server that tailors its response to the type of call received. FREEdotNET customers must use a network protocol called PPP, Point to Point Protocol, which negotiates between the two connecting computers automatically.

This greatly simplifies configuration and *Acornet* can support the required PPP with PAP (Password Authentication Protocol) set-up, so FREEdotNET provider details will be included in future releases of *Acornet* which will now be supplied by the company to Acorn-using subscribers.

The spirit of the Acornet package is that it is all freeware, so does not include the necessary Shareware *PPPDriver* software, but both are downloadable free from bulletin boards, and *PPPDriver* only costs about £5 to register. A small price indeed for nearly-free software to access the nearly FREEdotNET.

Acornet
http://freenet.barnet.ac.uk/acornet/
PPPDriver
http://www.axis.demon.co.uk/sergio
The FreeDotNet
info@thefree.net
0181 568 3377

Acorn works

John Brocks hopes his RadioWorks website will become one of the most comprehensive Acorn links sites on the Web. The Acorn corner of the site has more than 300 entries, and is reported to be already in the index of many of the search engines. The main list is classified into sensible headings, and there's an alternative alphabetic listing page for quick lookups, as well as an unsorted page which contains the newest links.

RadioWorks
http://www.radioworks.demon.co.uk/ACORN/Acorn.htm

ARM Pit Internet

Matthew Page's Peterborough ARM Pit BBS offers users Internet facilities such as free e-mail addresses, Web-page-by-e-mail request door and the American flavoured *Internet Tour Bus* newsletter. This is a twice weekly guide to cool ways of using the Internet, covering such topics as getting the best out of search engines, PGP privacy and using Internet Phone software. ARM Pit BBS supports the *BBSMouse* protocol, which enables you to point-and-click on ANSI BBS screen options. If you haven't got *BBSMouse*, you can download it from ARM Pit BBS.

ARM Pit BBS
01733 445800

Save that Psion 5

Psion 5 owners can backup all their files without resorting to *PSIWin* and *Windows95* PC by plugging the supplied Psion serial lead into the serial port of an Acorn 32-bit machine, then running the Freeware Acorn comms program *!Connector* and the Psion 5 *Comms* program to transfer the files either way by Y-Modem. Risc PCs can use the full 115,200bps speed, but earlier Acorn machines may need the mutual data rate to be set down to 9600bps, and make sure 'Handshaking' is set to RTS/CTS. *Connector* is available free from BBSs and websites.

Connector Mirror site
http://www.geocities.com/SiliconValley/Vista/4806/connector.zip

Contacting me

Keep sending me interesting URLs for the next yoUR List by e-mail to david@arcade.demon.co.uk, or mail #2 on Arcade BBS 0181 654 2212.



Startup

The public domain is awash with programs to enhance the startup of your computer, and the PD column encouraged a whole range of releases that provide random backdrops on startup. Nigel Parker's *Startup* program puts that idea into the audio field and plays random sounds when you start your computer.

Simply convert your sounds into voice mod formats and save them into the !Startup.samples directory. When your boot sequence runs the program, a random sound is played. You can also add a special kill program to the end of your boot sequence to kill the voice mod and thus free up the memory after it's been played. *Startup* can be located on the Digital Databank BBS.

NoPaint

NoPaint is a little utility by André Timmermans that works remarkably like *Paint*, but without the actual painting and editing facilities. The aim is to provide a very simple, no fuss utility for managing and maintaining spritefiles of WIMP icons, and this it does very well. You can do the same job in *Paint*, but this makes it all a little bit easier. *NoPaint* can be found on the Digital Databank BBS.

Recommended PD Libraries

- APDL, 39 Knighton Park Road, Sydenham, London SE26 5RN
- Arch Angel PD, PO Box 41, Exeter EX4 3EN
- ARM Club PD Library, Freepost ND6573, London N12 0BR
- Beebware PD, 83 Forrest Road, Huncote, Leicester LE9 3BH
- Five Star Marketing, 4 Shepherds Walk, Bushey, Hertfordshire WD2 1LZ
- Naked PD, 'Fayence', Fulford Road, Stoke-on-Trent, Staffs ST11 9QT
- The Datafile, WIlloughby House, 89 Woodville Road, Boston PE21 8BB

Abuse

Quake and *Doom* have caused much interest in the field of porting games from the PC to the Acorn. Various versions of ID's games are kicking around on the Net, whether in the form of completely rewritten code, or touched-up versions of the original game code. Acorn coder, Lee Noar, has taken the idea and used it to bring us a slightly less impressive but nevertheless very playable arcade game.

Earlier in the summer, the PC software house, Crack dot Com, released the source code to its arcade platformer, *Abuse*. Lee has taken the source and got it working on his Risc PC. The result is a fast and playable version of this rather nice game. Lee gives few details of the work needed to get the program running under RISC OS, but I'd imagine there'd be plenty of graphics and sound routines that would require modification.

The game itself takes the familiar arcade platform style and comes with the usual rather improbable story (why do all maximum security prisons have deranged genetic scientists?) but it makes for quite a cool game.

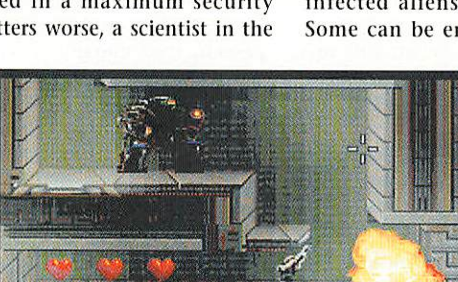
The platform style is very familiar, with the cursor keys controlling your marine's directional movements. The novel part is the way you aim your laser gun. The mouse controls cross hairs that you can use to target aliens and other nasties on screen. Your marine will aim at the cross hairs whichever way he happens to be running. Very handy for those 'run away, but still fire your gun at the aliens' moments. If you've seen *Walker* or *Alien Breed* on the Amiga, you'll know what I'm talking about.

The graphics are very nice for a game which is effectively available as public domain, and they're used to create the kind of dingy ambience of the prison. The standard walkways and tunnels are livened up by a variety of doors, lifts and teleporters, and the inclusion of door switches adds a puzzle element to the game. The action



background story. In the year 2009 you've been wrongly incarcerated in a maximum security prison. To make matters worse, a scientist in the prison has created a genetic virus called Abuse that has turned everyone else in the prison into rather nasty H.R. Giger style aliens.

After escaping from your cell you have to fight your way to the control room to stop the spread of Abuse. As always, it's a



part is provided predominantly by the Abuse infected aliens wandering around the prison. Some can be encountered in an active state in the corridors and others spring from alien-like tubes in the ceiling, when you're least expecting it.

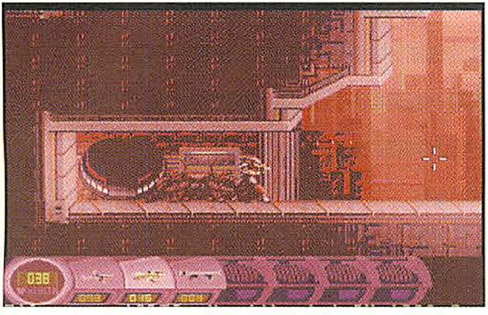
The aliens themselves *look* remarkably like the rather nasty xenomorphs from Alien 3, and their habit of running along the ceiling and then jumping

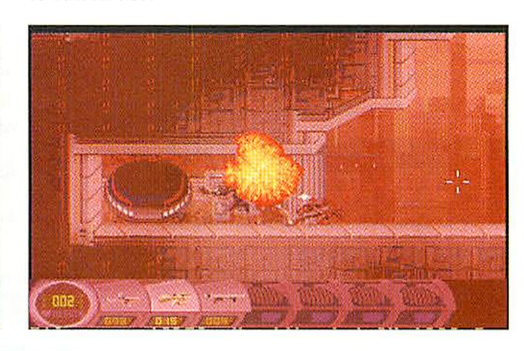
on your head makes it all quite exciting. Typical platformers of this kind involve little skill when it comes to shooting. You wander along and fire in a line in front of you. The novel mouse control to aim your blaster in *Abuse* adds a whole new element to the gameplay. To get through the levels without losing too much energy you have to combine the run and dodge skills controlled by the keyboard, with some pretty accurate mouse aimed shooting.

A range of power-ups can be found around the prison, including everything from extra ammo and health to new weaponry. My brief play-test of the first few levels revealed an extra grenade launcher (essential to take out the extra strong blue aliens) and a rather excellent missile launcher. *Abuse* is an excellent game for a PD release and it's well worth getting your hands on. Due to its PC origin, there are one or two drawbacks however.

Firstly you'll need a Risc PC to get it working and I'd imagine that a StrongARM is pretty essential to get enough speed out of it to make it playable (if anyone's tested it on a slower machine, please let me know how it plays). Secondly, it's a bit on the large side at around 6megs of hard disc space, and an extra 2megs of temporary space while its running.

This makes it quite a large Internet download, so if there are any PD libraries selling it as a complete pack, let me know and I'll quote a reference in a future issue. *Abuse* is available on the Internet at http://www.argonet.co.uk/users/leenoar/ Note that you'll need a version of *Xfiles* to run *Abuse*.





Patch work

Matthew Bullock has released a new version of his 3D patch based on the original 3D menu patch by Ting Zwei Kuei.

The update runs on the new window manager, fixes a few bugs and includes a rather nice config menu.

In case you've never encountered the patch before, it's a rather nicely produced bit of code that touches up RISC OS menus, making them appear slabbed out in a 3D style. Installation is as simple as running the installer and picking the options you want. The program installs the patch to your boot sequence.

A quick reset later, and suddenly all your menus and the icon bar have a nice 3D feel.

My only complaint is the rather freaky flicker effect you get on the icon bar when you move the pointer to scroll at the far right of the screen.

The current patch update runs only on the new window manager, but versions are available for older OS versions. Another of Matthew's excellent utilities is his handy *PinPatch* program.

PinPatch fixes a number of bugs in the standard RISC OS Pinboard manager and adds a few new features.

The most outstanding of which is the ability to use JPEG files as backdrop pictures. This works exactly like pasting a Sprite to the backdrop.

All of Matthew's programs can be found on his website at http://dialspace.dial.pipex.com/matthew.bullock/

Essential utils

Regular cover disc contributor Dave Thomas has released a range of updates and new applications which are well worth checking out.

QuickFiler is a rather sly utility that patches the filer to add instant hot key controls for all the simple filer operations.

With *QuickFiler* active, filer windows can obtain input focus with a click of the mouse, allowing you to use functions like delete, select all and display options, via hot keys. Easy to install and very intuitive to use. Nice.

The second of Dave's utilities is *ImageFree*. This little program sits patiently on your icon bar until you drop an image file to it. A free space window is then opened to reveal how much space you have left.

Very handy for checking how many megs of disc space you have left in your PD partition, without having to start up your PC OS to check it manually.

The latest versions of all of Dave's programs are available from his website at http://java.cms.livjm.ac.uk/cmsdthom/

SACache

SACache is yet another utility for controlling the memory cache on StrongARM processors. The majority of these software controllers allow you to turn the entire cache on or off with a hot key to prevent games that use StrongARM-unfriendly code from crashing. *SACache* goes several steps further by allowing you to turn each part of the cache (the data, instruction and write caches) on or off at will.

Even better is the ability to set up the program to turn off specific cache parts when you run a game by dragging it onto the *SACache* icon. *SACache* applies the cache settings, then runs the game and automatically turns the cache back on when you return to the desktop. Turning specific parts of the cache on or off gives you more control over the speed of your machine, making it easier to simulate old computers. *SACache* can be accessed from the VOTI home page on the Web at http://www.rodean.demon.co.uk/fromhome.html

Smallification

SmallDir is a clever utility that 'smallifies' your directories. Some users prefer to use the 'large icons' setting in filer windows and in most cases that's satisfactory, but if you happen to have a lot of files in one directory, you end up with a very large filer window.

SmallDir lets you set up the path of any directories you want to be displayed with small icons, while all other directories use large icons.

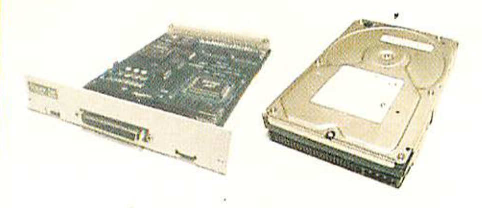
It's a good idea, but a lot of hassle entering all the path names in the setup file. How about a version which counts the number of files in a filer window when it's opened and displays it in a 'smallified' manner if there are more than a definable number of files? *SmallDir* can be found on the Digital Databank BBS.

Contacting me

You can contact the PD page by writing to me, Paul Wheatley, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield, SK10 4NP. Or preferably, by e-mail to aupdpage@idg.co.uk





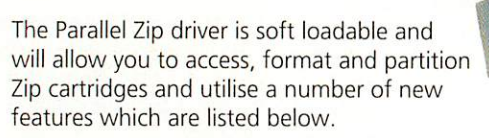


The complete disc solution

PowerZip

Power-tec Parallel Port Zip Driver

Announcing the new Power-tec Parallel Port Zip Driver software.



The Parallel Zip driver is soft loadable and will allow you to access, format and partition Zip cartridges and utilise a number of new features which are listed below.



Main PowerZip Driver Features:

- Supports daisy chaining of multiple parallel Zip drives!
- Ability to create many partition types including: DOSDisc.
- Disc write protect option (using Password).
- Media interchangeability between SCSI and Parallel Zip.
- Ability to read old Argo Zip Discs.

PowerROM

Power-Up your old SCSI card!

If you have an old SCSI card from one of these manufacturers:

Acorn • Castle Technology • Cumana
HCCS • Lingenuity • Morley • Oak • Vti

and want all the benefits Power-tec SCSI card users enjoy as well as being Risc PC/StrongARM compatible, then you need a PowerROM!

The PowerROM upgrade gives your old card a new lease of life, with the full SCSI 2 command set and all the functionality and compatibility of our Power-tec SCSI cards.

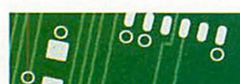
PowerIDE

Power-tec IDE Partitioning Utility

Our new low-cost IDE partitioning software allows you to partition large IDE drives and gives the following features:

- Allows users with Risc OS 3.6 & 3.7 to partition large IDE drives (eg 9GB) into smaller partitions thus reducing the LFAU size and saving hard disc space.
- Allows users with versions of Risc OS 3.1 & 3.5 to partition large IDE drives (eg 4GB) into multiple 512MB partitions.

The PowerIDE driver is soft loadable and allows you to access, format and partition large IDE drives for Risc OS and DOS.



PowerJaz

Power-tec Parallel to SCSI Jaz Converter

Announcing the new Power-tec Parallel Port to SCSI converter for Iomega SCSI Jaz Drives.



The Parallel Jaz driver is soft loadable and will allow you to access, format and partition SCSI Jaz cartridges *on the move* using the Iomega Jaz Traveller interface supplied.

Fast SCSI II / Ultra SCSI III

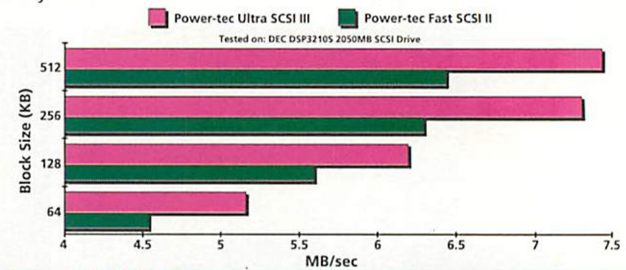
Power-tec SCSI cards

The Power-tec SCSI cards support all the leading SCSI devices from Iomega, IBM, Seagate, Quantum to name just a few.

Acorn User Magazine, Christmas 1997 SCSI Review said the following about our Fast SCSI II card:

"On the fastest drive tested, it was able to differentiate itself from the rest of the pack."

If you want really fast data transfer speeds on your Acorn Risc PC, for use when Video Editing, serving files on a NetWork or even to speed up the overall operation of your machine our Ultra SCSI III card is even faster than SCSI II, and will be ideal for you!



PowerATAPI

Power-tec ATAPI CD ROM Drivers

New low cost Power-tec Atapi, gives you full Atapi CD ROM drivers which support a wide range of CD ROM drives including Multi-changers (suitable for Risc OS 3.1 onwards).

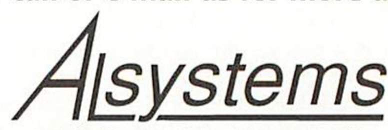
Prices

PowerZip	Driver only:	**£25**
PowerZip	with Iomega Parallel Zip Drive:	**£135**
PowerJaz	Driver only:	**£25**
PowerJaz	with JazTraveller Interface:	**£49**
PowerIDE	Driver:	**£25**
PowerAtapi	Driver:	**£25**
PowerROM	Upgrade (state make of SCSI card):	**£35**
Power-tec	Fast SCSI II card:	**£135**
Power-tec	Ultra SCSI III card:	**£175**
Ultra SCSI III	Upgrades:	
	v1.0x Standard Upgrade:	**£110**
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NB: All prices exclude VAT and carriage.

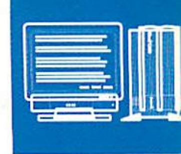
* This price applies to customers with Technical Support current at 1st September 1997.

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PC problems

This month I'm largely devoting the space to reader's letters.

First comes some advice, courtesy of George Shutler from Jersey, whose experiences could well prove of value to others. He tells me he recently purchased a Zip drive with software to run it under both RISC OS and PC card/Windows 95. At first all went swimmingly – hardware and software installed simply, and as per instructions on RISC OS appeared to be doing much the same under Windows. As is usually the case with new hardware configurations, installing under Windows requires a machine reset (well, a card reset in the Acorn second processor world). On rebooting Win 95, the start up screen appeared, the screen went blank, then... nothing at all.

George relates that nothing he could do seemed to wake up the system so he resorted to re-installing everything from scratch. Exactly the same thing happened second time around – at which point George walked away from it in frustration. He returned five minutes later to discover Win 95 staring him in the face and ready to roll. Investigation proved that the drive was working, but incredibly slowly, hence introducing delays into otherwise rapid procedures like booting up.

To cut a long story short, a call to CJE resulted in a suggestion that proved correct – that if the RISC OS Zip software was running when trying to access the drive via the PC card, maybe that was upsetting the system. And so it proved. George tells me he shuts down the RISC OS side whenever he uses the Zip with the PC card and it all works fine.

So if you have problems of this nature – you know what to do. If you have a solution, let us know. Meanwhile, thanks George.

Sound advice

Next comes a question from Ishan Singh-Levett who writes from New Zealand. He (I presume Ishan's a he – my apologies if not) is having trouble getting sound out of DOS games, specifically *Command and Conquer* and *Red Alert*.

He's not the first, nor will he be the last, and many other DOS games have the same problem so it's worth going over the solution. OK, here's the reason first. The world of the PC is hardly well-defined and not only are there many different sound cards in use but they can, and are, addressed in different ways. *!PC* has audio drivers that respond like the single most popular PC sound card, the Soundblaster, and passes an interpretation of the sound commands to the RISC OS sound system.

So far so good. But even though the Soundblaster is a standard of sorts – programmers evidently feel free to address the cards in any way which gets the results they want. Fair enough – but it's impossible for *!PC* to second guess all the possible variations. And with the two titles mentioned, the result is that the software hangs if the sound system doesn't function properly – unless you configure the sound to be off at the set-up screen.

So the first answer is to set the sound to off, then your game will run. But that needn't be the end of the matter, because R-Comp Interactive have developed a piece of software they call *!PCSoundPro* that patches this kind of fault on a great many games. Bear in mind this isn't a total fix, in that games are essentially patched one by one, so it may not fix your particular game.

!PCSoundPro installs easily and is invisible in use and I've used it to fix the very problems Ishan has suffered. If you have any other software that needs a fix, you can see if R-Comp has got it covered by looking up their website at www.rcomp.co.uk The software (at present) covers 189 titles and costs £30 inc VAT plus delivery of £5 outside Europe.

Expanding problem

Lastly, Dr Djordje Antic writes from Yugoslavia with problems running his PC expansion card in an A540. He says that *!PCPro* installs but gives the error message *PC card did not reset* when he starts it up.

This is because *!PCPro* was not written for PC podules and will either produce the above error message or report *Wrong hardware*, depending on your system. But all is not lost. As well as the earlier versions of the software for podule cards, Aleph have a beta test version of *!PCPro* on test. So the best answer is to get in touch with them. Their website is at www.aleph1.co.uk Alternatively you can call them on + 44 1223 811679.

Contacting me

You can contact me, Mike Buckingham, by post at: *Acorn User*, Media House, Adlington Park, Macclesfield SK10 4NP or by dropping me an e-mail at: aupcpage@idg.co.uk

RComp sound deal

R-Comp tell me they have just signed a deal to take over development of the sound system in the PC Card. They have also discovered that the current PC cards have a hardware DMA system on board which at present is not being used. For the untechie among us (I include myself) R-Comp explained that many sound problems such as corruption and repeated sections are caused by DMA (Direct Memory Access) problems.

R-Comp are hopeful they will be able to eliminate the software DMA routines within the current version of *!PC* and use the hardware to eliminate these problems. At first sight this might suggest an increase in speed too, but it seems that is unlikely.

!PCPro update

Aleph One haven't been resting on their laurels either. As I write, there are beta test versions on trial of a new version of *!PCPro*. Laurie van Someren says that a new version will be available soon that is a bit faster with an improved interface. This will be followed by a further upgrade offering a 15-20 per cent speed improvement. Aleph customers can get the first free by disc exchange, the second will cost between £5 and £10. Other PC Card users should contact their suppliers.

Support for Windows NT is under development, but as I write the software isn't sufficiently ready for a release date to be finalised.

The future with PCI

With speculation about Risc PC II running riot, I feel I ought to join in. I can't say I know that much but I hear that it will have a PCI bus. Alien to the Acorn World, PCI is the standard interface for expansion cards in IBM compatibles. That means that Acorn hardware will get access to the huge number of expansion cards available for PCs – such as 3D graphics accelerators and other goodies not available for Acorns.

I have no idea what is in store for PC cards or what the machine will have in the way of multiple processor slots. But a little imagination suggests that the PCI bus could make running PC software much, much faster, much more compatible and at a reasonable price given that all enhancements should benefit the host computer too.

music & audio

Another year and what's new?

The annual Acorn World Show has now come and gone so what's new in the Acorn music world? Well, to be honest, not that much. Like most areas of the market, music and audio seem to be doing their usual impression of the proverbial tortoise, and slowly but steadily moving forwards.

There have been a few ships on the horizon in the form of Oregan's *MIDIWorks* and the increasingly popular *Sibelius 7*, but promises of RISC OS becoming a major music platform have yet to materialise. It's not that the skills aren't there; quite the contrary. I think it boils down to a lack of resources. If Acorn hardware, and therefore software, is going to make any inroads, what's really needed is a group effort to bring together the skills that are out there and create that killer app.

Just like buses, decent applications never appear when you want them. You have to wait ages and ages and when they do finally turn up, you get two or three of them together. All look the same, do the same things and stick to the same route. Of course it would be nice to have a big, new shiny bus brimming with new features available for every route but that's just not going to happen straight away. What we really need is a solid vehicle that always turns up on time, does all the things we can expect and, most importantly, never breaks down. Only then can we start moving forwards.

Time is also of the essence and the joint hare of Wintel and Apple is always there to keep Acorn's tortoise on its toes. So, how about it? Find out what the people want, get together and then just do it.

Audio Connect from ACE

German developer ACE look set to give Audio Dynamics a run for their money with the launch of *Audio Connect* – a multimedia audio system featuring FM synthesis, a General MIDI Wavetable and 3D sound. Built around a single interface card, *Audio Connect* is designed to work with all current (and future) models of the Acorn Risc PC as is being cited by ACE as the 'SoundBlaster for Acorn Risc PCs'.

Other features of the card include an 'enhanced digital gameport' to enable joysticks and gamepads to be connected easily to the computer. There is also a consumer IEC-958 digital output (S/PDIF) which will allow digital data to be transferred directly to mediums such as DAT and MiniDisc. The sound generation capabilities comply with the GM specification and feature 32 voice polyphony over 16 separate channels. Special effects include Reverb and Chorus, similar to Yamaha's XG specification.

No price has been announced yet, but I would guess it will be similar to that of Audio Dynamics' DMI card which retails at around £300 for a fully specced card.

ACE have their own website which will include further details of the product and this is at http://www.acebace.de Alternatively you can contact them at ACE Acorn Computer Enterprises, Baroper Bahnhof Str. 55, 44225 Dortmund, Germany. Tel. +49 231 7274-260, fax +49 231 7274-260 261 or e-mail: acesales@plaza-project.de

Sibelius hits number one spot



Sibelius 7, the award-winning music scoring package for RISC OS goes from strength to strength with the recent announcement that it was used to orchestrate and print the music for the latest Hollywood blockbuster *GI Jane*.

GI Jane is the latest film from *Alien* director Ridley Scott and stars Demi Moore in the lead role. British composer, Trevor Jones, whose previous work includes *Last of the Mohicans*, *Angel Heart* and *Mississippi Burning*, wrote the entire score using what is now regarded as the premier music 'wordprocessor'.

Another famous name making use of Acorn hardware and software is none other than ex-Beatle Paul McCartney. Recently McCartney premiered his new orchestral piece *Standing Stone* to great acclaim with the London Symphony Orchestra at the Royal Albert Hall, London.

While *Cubase* was used for the sequencing, there was nothing that could match *Sibelius 7* so it was then transferred directly to RISC OS as a MIDI file.

While it would be nice to be able to do all the work on Acorns, it's still important to note that the technology can integrate so well with other platforms.

Sibelius can be contacted at 75 Burleigh Street, Cambridge, CB1 1DJ. Tel: 01223 302765, fax: 01223 351947 or e-mail info@sibelius-software.com



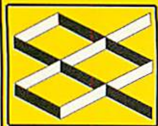
Tune of the month

Thank you to everyone who has sent in entries for the new Tune of the month. Everything so far has been in one of the many tracker-type formats although I'm still hoping for some MIDI files. Please don't forget that any MIDI tunes submitted should conform to the General MIDI specification. Entries are welcome to any of the addresses below.

After much deliberation, the prize this month goes to Clem Edmond for his *Cloud-11* Digital Symphony track. Clem describes it as bass-heavy acid trance which I certainly can't argue with. Nice one Clem. Er, no prize has been worked out yet but rest assured, by the time you read this, something rather groovy will have turned up on your doorstep.

Contact:

You can contact me, Rob Miller, at the usual *Acorn User* address or by e-mail at: aumusic@idg.co.uk



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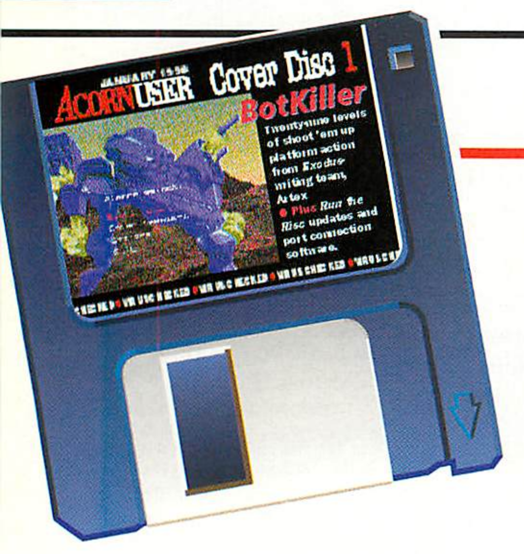
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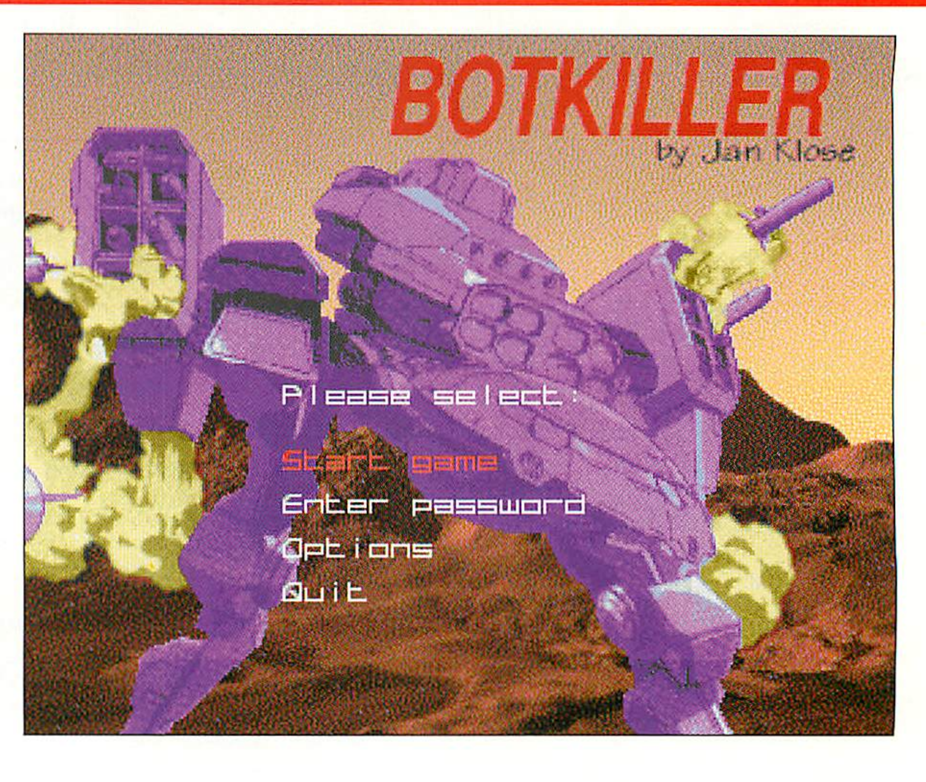
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BotKiller

Artex



Before they created the recently released commercial game, *Exodus*, Artex wrote a platform game – and this is it, though it's not to be considered an *official* Artex production, it's Freeware.

The plot

You are Dan the Botkiller on his mission to destroy all the robots – called 'bots – of SpaceTronic Inc. that have gone completely insane. You must complete all 30 levels and kill the two big command bots before you can fly home.

Each level offers new riddles that have to be solved. The first 10 levels are very easy, the next 10 are quite taxing, and the last 10 are really hard. So do not judge the game after having played only five levels or so...

Game elements

Terminals let you control the exit status and the status of the beams. They may also give you information about your enemies and sometimes there's even a hint.

Shops are for acquiring useful things by using up some of your money.

Ammo packs provide more ammunition, pick them up, don't shoot them and **containers** provide additional points and money, striped ones give more bonus, shoot them.



Bots should be destroyed.

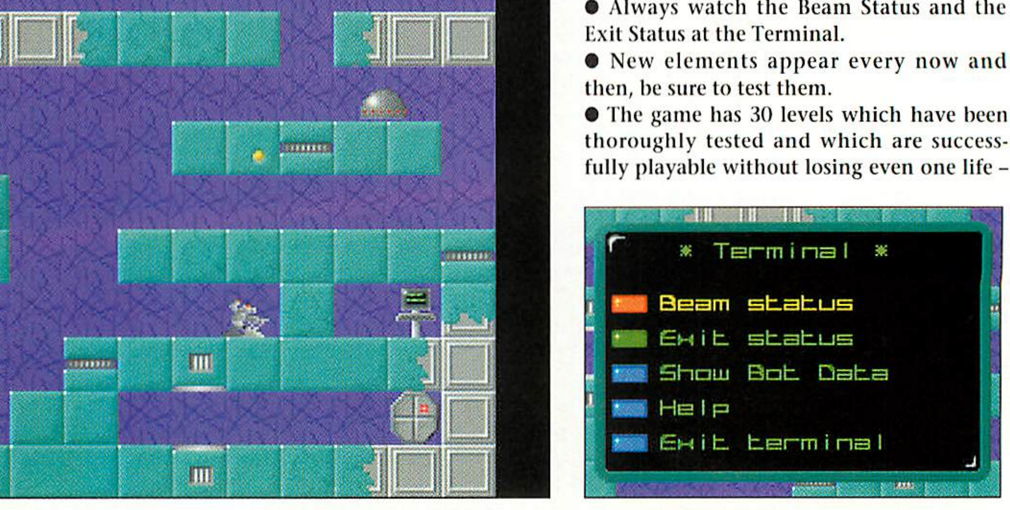
There are more game features but you'll have to find them out for yourself.

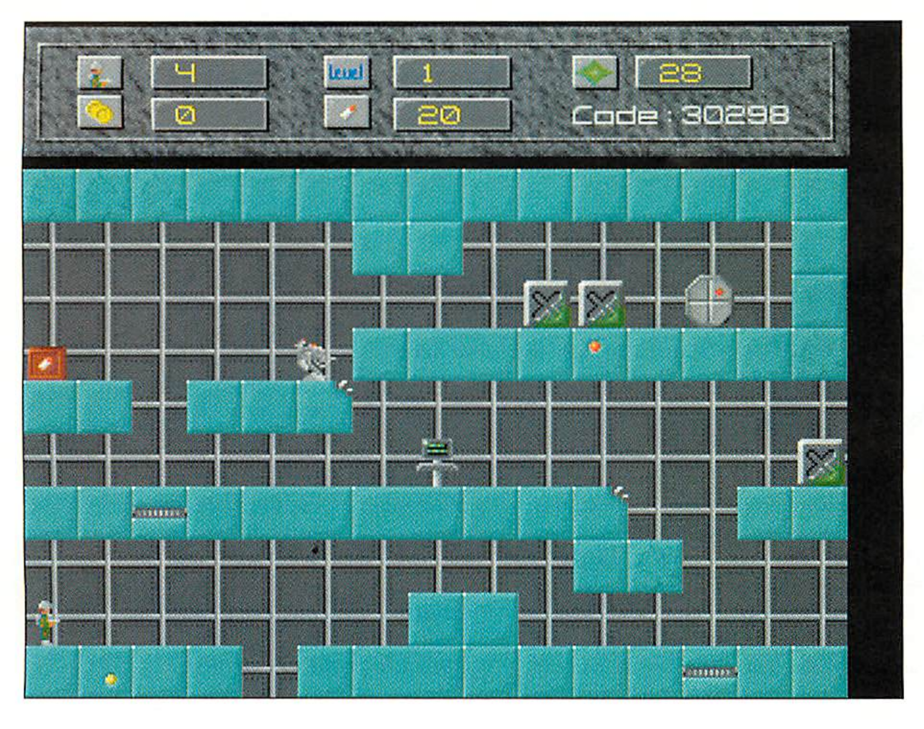
Controls

Z or left arrow	Walk left
X or right arrow	Walk right
' or up arrow	Jump
/ or down arrow	Pick up/activate something
Return	Fire weapon
Q	Lose a life
Escape	Quit game

Hints

- You cannot shoot while jumping "through" a wall.
- Beam shields are useful in higher levels.
- The walls may not be what they seem.
- You only have to remember your password when leaving the game.
- Always watch the Beam Status and the Exit Status at the Terminal.
- New elements appear every now and then, be sure to test them.
- The game has 30 levels which have been thoroughly tested and which are successfully playable without losing even one life –



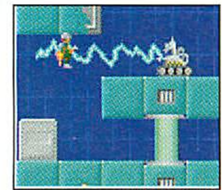


if you are good enough. Every problem can be solved by thinking and skill.

Requirements



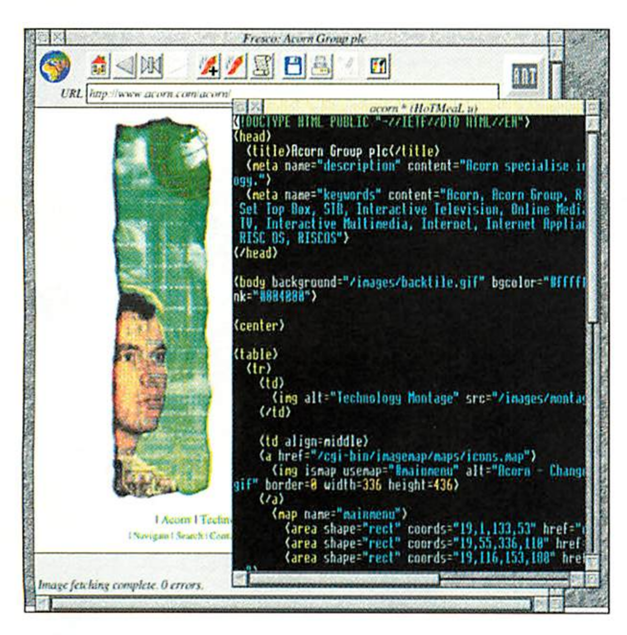
BotKiller needs RISC OS 3.1 or better and 1400K to run. If you don't have that much use the alternate run file called !Run2. Open the application with a Shift+double-click rename *!Run* to *!Run1* and rename *!Run2* to *!Run*. Now try running it again.





PenDown HTML

Logotron



This utility installs the HTML upgrade to existing *PenDown* software – you must have *PenDown* on your machine. Run the *!Install* utility and follow the onscreen instructions.

Pendown DTP Special Offer – see page 76

Extras

- The Different Dimensions demonstration software
- Updates to Mike Cook's PIC Assembler and Blower software
- Tune of the Bi-Month

Regular items

- Mike Cook's data acquisition software for the satellite weather pictures
- The Acorn User Free Ads
- All the *INFO programs – !JFShared will be included next month.

Disc information

The software on these discs has been compressed using *ArcFS 2* from VTi, and are opened by running a copy of *ArcFS* then double-clicking on the archive to open it. There is a copy of *ArcFS* on each disc.

Most software will run straight from the archive, but some programs may need to be copied out of the archive before being run, uncompressing them in the process. Any program that saves a file to disc, for instance, will be unable to do so into the archives on the disc.

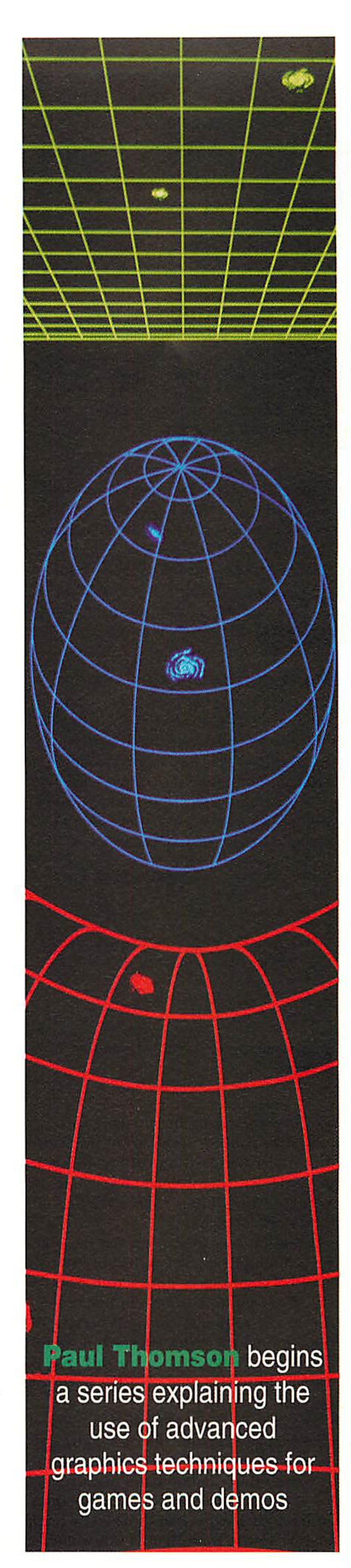
Faulty disc?

If your disc is faulty, test whether it will verify by clicking with Menu on the floppy drive icon and choosing Verify.

If it fails to verify or is physically damaged you should return it to *TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH.* If it verifies successfully return it to the *Acorn User* editorial office at the usual address.

The *Acorn User* cover discs have been checked for viruses using *Killer* version 2.800 from Pineapple Software.

A different dimension



Paul Thomson begins a series explaining the use of advanced graphics techniques for games and demos

Any Acorn games player who has visited an amusement arcade in the last three years and witnessed all the modern world of 3D games has to offer will have left with one of two questions. Either 'why did I go there?' or 'why can't my computer do those graphics?'.

For anyone interested in answering the first, it's simple – you got lost on the way to somewhere more interesting. For those asking the second, read on. This series of articles details some of the techniques arcade manufacturers have been using to dazzle their punters for years, and lets you experiment with them on your Acorn.

Experienced gamers, especially those used to the PC and console market, will be sceptical, and ask sensible questions such as 'Acorns don't have hardware accelerators for 3D games' and foolish ones like '30Mhz?? Ha ha, my keyboard processor runs faster than that.' Ignore them. With a few simple(ish) techniques, a healthy dollop of inside knowledge and a few hours of application we can write games that will be, at worst, graphically interesting. Let us begin.

The triangle

Rather than jumping in at the deep (and unfortunately, dull) end of 3D mathematics, I thought I'd skip a step and detail the atomic structure of modern 3D games – the humble triangle. Besides being structurally sound from an engineering viewpoint, the triangle is useful as a building block for all possible solid objects, and is very simple (and quick) to draw on the screen. All conceivable objects can be broken down into a number of triangular faces, even curved surfaces if we succumb to slight inaccuracies. To start with, let's consider how to draw a basic triangle of uniform colour on the screen, forgetting for the time being texturing and shading details.

Before considering the geometry of the triangle, we need to know a little about the organisation of the Acorn's screen. To remember what's on the screen the computer needs some memory, referred to as screen memory. The screen memory is arranged as a series of horizontal lines across the screen from left to right, starting from the top left and finishing at the bottom right.

Each line is split into a specific number of picture elements, or 'pixels', each having a certain amount of information attached to it. The size of the data associated with each pixel depends on the number of colours available in the particular screen mode, from 1 bit for black and white displays, to 32 bits for 16.7 million colours.

To set the colour of a particular pixel on the screen we must write data to the relevant area of screen memory, the address of the pixel in question. To calculate this address we use two steps. Firstly we calculate the address of the horizontal line (scan line, since this is the way the monitor displays the image) the pixel is on by:

```
screen_line = screen_memory + y *
bytes_per_line
```

Now we can calculate the address of the actual pixel:

```
pixel_address = screen_line + x *
bytes_per_pixel
```

And store the correct colour at that address. Now we know how to colour pixels on the screen, let us return to plotting ➤

Colour organisation in different screen modes

The Acorn video controller (VIDC) is capable of outputting video data using different colour specifications depending on the screen mode. Older (VIDC1) machines were limited to 256 colour modes (requiring log2 256 = 8 bits per pixel), while newer models have extended this to 15-bit colour (actually stored in blocks of 16 bits for convenience) or even 24-bit colour (again, for reasons of convenience stored in blocks of 32 bits). When writing colour data into the screen memory, we must obey the correct arrangement for the current screen mode.

256 colour modes

Data is organised in groups of 8 bits; a single byte represents a particular pixel. Pixel addresses are calculated as:

```
pixel_address = screen_memory + y *
screen_width + x
```

Colour data is organised in a slightly odd way. The three colour channels, red, green and blue, have 2 bits of data each and the remaining 2 bits make up the 'tint' component. The organisation of this data is:

Bit	Component
0	Tint low bit
1	Tint high bit
2	Red low bit
3	Blue low bit
4	Green low bit
5	Green high bit
6	Red high bit
7	Blue high bit

In fact, this organisation is such a pig to work with it's usually best to generate a colour lookup table so you can directly read out the colours you want. Such a table is used by the program *Triangle4* to fade the colours of the texture between the foreground and background intensities. The file ColTab on the disc contains 32 intensity levels for the whole 256 colour palette, and is organised in groups of 32 bytes for each colour. To read colour number N with intensity value I use this:

```
colour_number = colour_table ?
(N*256+I)
```

15-bit colour modes

For reasons of power-of-two-needs pixels occupy 15 bits, that is two bytes represent a single pixel. Pixel address are therefore calculated as:

```
pixel_address = screen_memory + y * 2
* screen_width + x * 2
```

Each colour channel is given 5 bits of data (each components can take values in the range 0-31). Red occupies bits 0-5, green bits 6-10 and blue bits 11-15. Colour data can be built up by:

```
double = red + (green << 5) + (blue
<< 10) pixel_address ? 0 = double AND
255 (OK, the AND is not entirely neces-
sary) pixel_address ? 1 = double >> 8
```

24-bit colour modes

These are by far the most convenient to program, but as each pixel occupies 32 bits of data, machines with no dedicated video memory (VRAM) are limited to a maximum horizontal resolution of 240 pixels. Each component is stored in 8 bits, or a single byte, letting us write data into each component with very little bit-fiddling. The pixel address is calculated as:

```
pixel_address = screen_memory + y * 4
* screen_width + x * 4
```

```
pixel_address ? 0 = red pixel_address
? 1 = green pixel_address ? 2 = blue
```

Or,

```
!pixel_address = red + (green << 8) +
(blue << 16)
```

the triangle. Consider a random triangle, Figure I, with its three vertices, A to C. The most efficient way to plot this to the screen is a scheme called 'scan conversion', a process where we calculate the intersection of the triangle with each scan line on the screen.

This makes sense if we recall that pixels on a particular scan line are represented by successive memory locations in the screen memory; when writing data to pixels in this order we can increment our pointer by a single value rather than a whole scan lines worth of data.

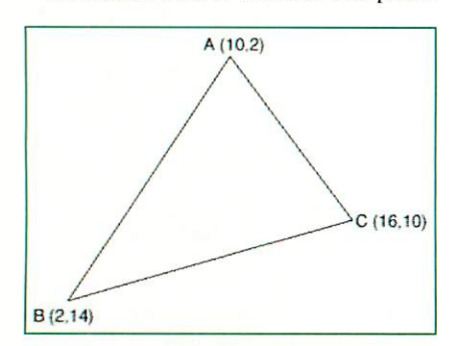


Figure I: A typical triangle

A sensible way to scan convert the triangle is to find its highest vertex (in this case lowest Y co-ordinate, since screen memory goes from top to bottom). In our triangle this is conveniently labelled vertex 'A'. Now find which vertex we reach if we follow the left edge from A, in this case B, leaving, by elimination, C as the vertex on the right edge from A.

We can now find the start and end of each triangle/scan line intersection by tracing the left edge to B and the right edge to C, noting the X co-ordinates of each edge for every scan line the triangle occupies, until we reach either B or C. When we reach another vertex, from Figure I this would be vertex C, we must start following the last edge, in this case from C to B, to complete the triangle. The most common method of tracing edges relies on knowing the X co-ordinate of a point on the edge and the value by which this changes between one scan line and the next, a value known as the line gradient. To calculate the gradient for a line we use the formula:

```
gradient = (end_x - start_x) /
(end_y - start_y)
```

If we know the X co-ordinate of a point on the line for one scan line, we can calculate the X co-ordinate of the line passing through the next scan line by simply adding on the gradient. For our triangle example we know the X co-ordinate of the first point of our two edges, starting from the top, both X co-ordinates are the same as AX. Applying the formula to the edge co-ordinates we get:

```
left_gradient = (BX-AX) / (BY-AY)
right_gradient = (CX-AX) / (CY-AY)
```

Using two variables, left_x and right_x to keep track of the left and right edges and starting with left_x=right_x = AX, we can now scan-convert down the triangle until we reach vertex C. Noting we've reached the end of the right edge, we simply recalculate right_gradient to trace to vertex B:

```
right_gradient = (BX-CX) / (BY-CY)
```

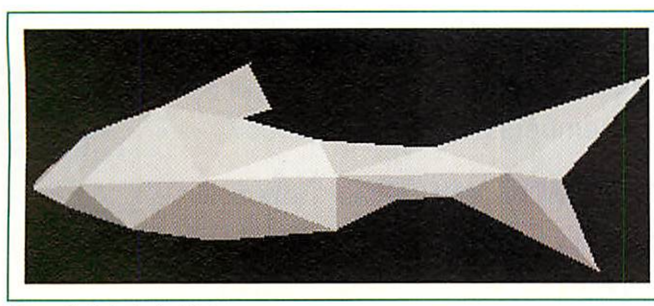
Knowing the start and end x-co-ordinates for each scan line we can simply fill horizontal lines in the right places to plot the triangle. Coding this into pseudo-BASIC gives us:

```
REM Scan-convert triangle
  left_x = AX
  right_x = AX
   left_gradient = (BX-AX) / (BY-AY)
   right_gradient = (CX-AX) / (CY-AY)
  FOR y = AY to CY
   LINE left_x, y, right_x, y
   left_x + = left_gradient
   right_x + = right_gradient
  NEXT
   right_gradient = (BX-CX) / (BY-CY)
   FOR y = CY+1 to BY
   LINE left_x, y, right_x, y
  left_x + = left_gradient
   right_x + = right_gradient
  NEXT
```

The program *Triangle1* shows this process in action for general triangles. It includes code to find the highest vertex and to sort the other two points into left and right edges. Other than that, it's the same.

Shading and texturing

Triangles aren't particularly exciting, especially flat coloured ones, but we now have a basis for fun things like 'gouraud shading', 'texture mapping' and lots more. Firstly, shading. Before I describe how to



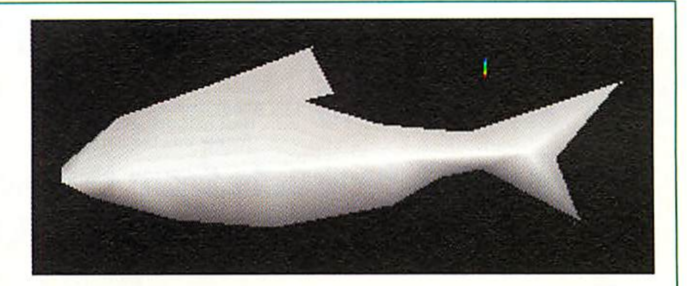


Figure II: Flat shaded fish

Gouraud shaded fish

calculate such things as light incident on a surface, which require knowledge of 3D co-ordinates and some modelled objects, I'll simplify the process for our needs by detailing gouraud shading now.

Gouraud shading is a method to improve the looks of 3D objects constructed from small numbers of faces, by smoothly fading the vertex intensities across the face, and helping to eliminate hard edges between adjoining faces (see Figure II). For the time being we shall ignore words such as 'illumination' and 'face' and concentrate on 'colour level' and 'triangle'.

To enhance our triangle plotter to allow gouraud shading we need to know the colour level at each vertex in addition to the co-ordinates. The fading process is achieved by interpolation, a technique eminently applicable to our scan-converter, where we find the colour level for each scan line by calculating the gradient and knowing the starting value (sound familiar?):

```
left_colour = right_colour = AC
left_col_gradient = (BC-AC) / (BY-AY)
right_col_gradient = (CC-AC) / (CY-
AY)
```

Following the edges as before, we know the left and right colour levels for each scan line and the start and end X co-ordinates from our original triangle plotter. To complete the gouraud shader we must modify the horizontal line fill routine to interpolate the colour across the scan line, a task easily achieved using the gradient formula again.

```
start_colour = left_colour
colour_gradient = (right_colour-
left_colour) / (right_x - left_x)
```

The program *Triangle2* demonstrates the modifications. Drag the intensity bars on the left of the display to see the effects of the colour interpolation.

Besides interesting lighting, the other main revolution in 3D graphics since the days of *Elite* on the Beeb is texture mapping. Graphics researchers discovered long ago the improvements in realism that could be gained by wrapping their 3D objects in pictures to give subtle surface detail that would otherwise require inhibitive numbers of faces.

Modern games have made extensive use of the technique, and modern consoles contain custom hardware to cope with the processing demands. Without such luxuries we must make do with a method of texture mapping that sacrifices ultimate accuracy for ultimate speed.

The method used in many games, indeed most Sony PlayStation games use it, is very similar to the gouraud shader outlined above and requires two more items of data per vertex, the texture co-ordinates. A good way to visualise texture co-ordinates is to imagine an object with pictures on the faces, e.g. a cornflake box. We wish to wrap a picture containing the writing and the cow/milk/strawberry antics around a model of the box, this picture being two dimensional (imagine unfolding the box so it is one large piece of cardboard). The texture co-ordinates for each vertex of the three dimensional box are the points that coincide with the 2D picture when the box is unfolded. Right? See Figure III if that explanation revived uncomfortable memories of A-level physics.

We can now interpolate the texture co-ordinates along the edges and across the scan lines in the same way as the colour intensities, that is by calculating the texture_x gradient and the texture_y gradient. *Triangle3* on the disc demonstrates this by linking two triangles together to form a texture mapped quadrilateral.

And the inaccuracy of the method? If you run *Triangle3* and stretch the quadrilateral to form a rhombus with one edge far longer than the other, the texture map looks very warped across the seam between the triangles. This is due to a mathematical oversight in the texture mapping function, and the fact that texture co-ordinates do not vary linearly across scan lines.

Although overcoming this problem is actually quite straightforward, to do it accurately requires a division for each horizontal step across the line, and as all ARM coders without the FP unit know, divisions are to be avoided if at all possible, particularly in the most commonly executed part of the routine.

Don't be disheartened though, our method is perfectly suitable for general purpose games. For a more in-depth use combining gouraud shading and texture mapping run *Triangle4* on the disc to see a bezier patch plotted from 256 triangle segments.

In the next article we'll be playing around with 3D objects and putting our triangles to good use. AU

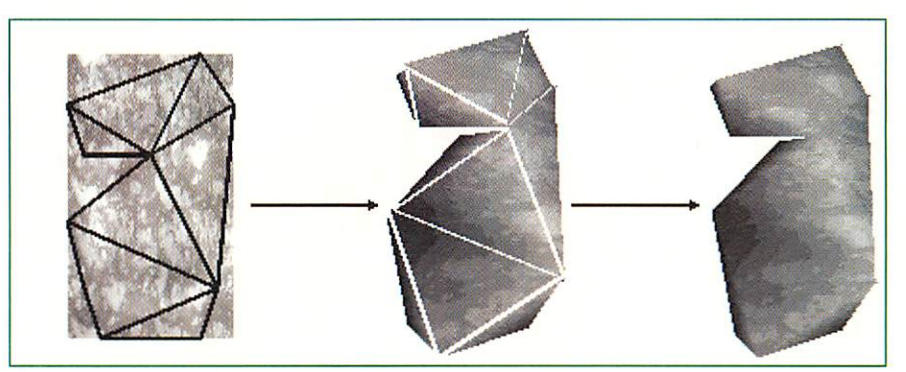


Figure III: Texture mapping

Cut down programs for older machines

If you are fortunate enough to own a machine with a VIDC20 video chip you'll no doubt have the luxury of high resolution screen modes, with more colours than is actually possible to fit on the screen at once. Lucky you. The programs *Triangle3* and *Triangle4* are for you, but both require a 640 by 512 pixel screen mode to be defined to work properly. A suitable definition is on the disc.

If you're still running a trusty VIDC1, you'll find *Triangle3b* and *Triangle4b* are more likely to run, although if you have pots of memory and a multisync monitor you may try the first two. These variants use standard mode 13, 320x256 with 256 colours.

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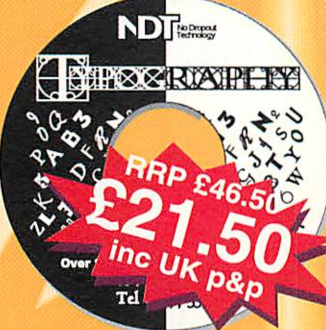
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CD goings on

Stephen Scott divulges how he created the latest Acorn User CD-ROM

I was asking for it. "Yes, I would love to do the next cover CD," I said eagerly on a hot Monday afternoon in July 1997, at a small meeting with Steve and Karen, arranged hurriedly to find out who was going to produce the CD for the December issue.

I was a few weeks into a summer tenure at IDG, and I would have quite happily spent it sipping cocktails on the patio overlooking the Cheshire plains, and perhaps writing the odd article for a forthcoming issue. But it was not to be.

Maybe it was the insatiable hot weather that had affected my brain, but I then said something along the lines of "I'd love to make it triple format, so it can also run on Mac and PC machines." Anyone who knows about doing cross-platform multimedia CD-ROMs will realise how much of a headache this can be, as I found out later on.

Trials and tribulations

Yes, I put together the CD-ROM attached to December's 'coffee cup' issue, so any readers who thought that it was a free coaster will have been sorely disappointed. This article reveals the trials and tribulations involved behind its production, and at the end, I shall reflect on the lessons I learned from its outcome.

It is difficult to look back at how I went about doing it, as I did not keep a diary, so you must forgive my tone of writing. If you wish to know more, or make a comment about the CD-ROM, then you can contact me through *Acorn User*, or by e-mail. The address is at the end of the article.

Steve and Karen appeared rather relieved upon my volunteering. It was, on hindsight, a rather blatant clue as to what lay in store for me. But at the time, I was oblivious to it, perhaps too naive in thinking that putting a CD-ROM together was quite an easy job. By the end of that first week, I felt rather differently.

Triple format

From the outset, I suggested the use of *Hyperstudio*, as I was aware of its triple platform capabilities, from both the Acorn Press, and demonstrations given to me by lecturers at university. To this day, *Hyperstudio* is the only commercial Acorn authoring program whose files can be run, with minor alterations, on the PC and Macintosh.

Packages such as the *Genesis* series and *Multimedia Textease* are not currently available for the Macintosh. The industry leader, *Macromedia Director* has not (yet) been released for the Acorn platform. The only other possible choice was HTML, as used on the previous cover CD-ROM interface. However HTML to my mind was not flexible enough and would mean having Web browsers for all three platforms on the CD-ROM – an unnecessary waste of space.

Using Hyperstudio

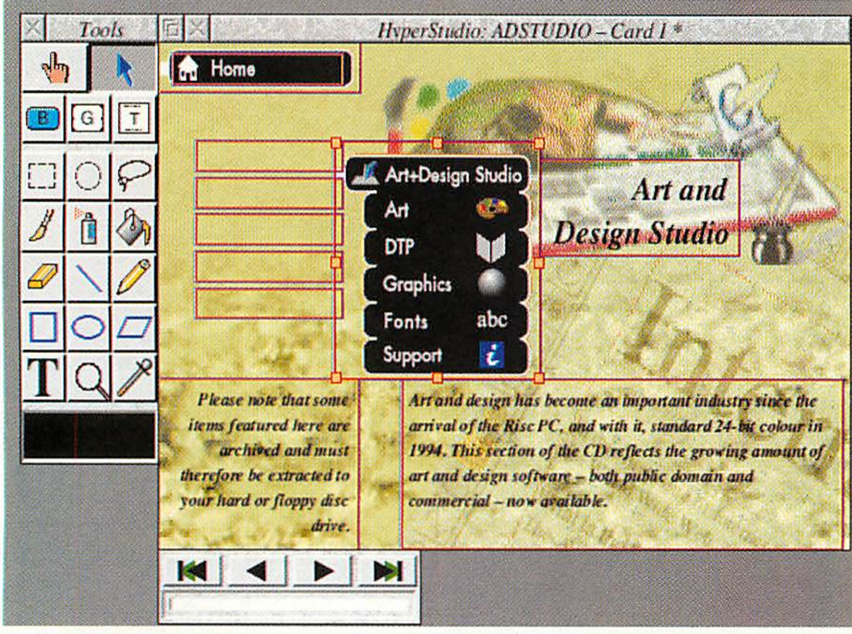
For those of you unaware of *Hyperstudio*, it is a multimedia authoring program devised initially for the Mac and PC by California based Roger Wagner Publishing, followed by an Acorn version from UK publisher TAG Developments. It is designed to be extremely simple to use for all ages, particularly young children. But for more experienced users, the presence of a specialised language, *Hyperlogo*, could add functionality and interactivity to your work.

I made a telephone call (the first of many) to Rosemary Partridge at TAG, who contacted Roger Wagner for the go ahead. It came some days later, along with a preview CD-ROM, whose contents would be included on the cover disc. In the meantime, I made quick notes on how the disc would be structured. I knew that an interface should be created to allow the user to navigate the contents quickly and easily, without feeling lost. I began considering the concept of 'themed' areas so that software and media could be shoehorned into them.

About a week and a half later, three full copies of *Hyperstudio* arrived at my desk, one per platform, so that I could test the interface regularly during development. My work machine, a newly acquired A7000+ with an Internet connection would be a vital facility in collecting and receiving contributions from users.

The work begins..

Over the next two months or so, to the sounds of Massive Attack, Fifth Element, Sting, and others, my weeks consisted (in no particular order) of graphic designing, using *Photodesk*, *ArtWorks*, *Paint*, *Draw*, and just about every other drawing program on the Acorn; trying (not always successfully) to decompress software that was being e-mailed to me by software authors; accessing websites to download programs that their respective authors had e-mailed me about, but for reasons best known to them, decided not to send



Positioning the graphics within the screens – the purple outlines are the button 'hotspots'



by themselves; moving software and files around my CD directory on the hard disc; trying to cope with ANT's *Marcel* mail program, which crashed regularly for strange reasons; and, playing *Magnetoids* at lunchtimes.

For the interface, I wanted to back away from the clean, chrome look that appears to be the standard these days. I liked the notion of an ethnic, Far Eastern appearance. When it came to producing the graphics, I used the rubber stamp facility in *Photodesk* to produce the textured backgrounds. I made use of the default ones which came with the package, although I did create a few more.

The icons which occupy the left hand side of the screen were produced using *ArtWorks*, while the typeface was a Futura variant by the name of Europe, which came with Beebug's *Ovation Pro* package. Futura is a nice, clean but sophisticated typeface.

Stacking

The *ArtWorks* icons were then screen grabbed with *Paint*, cropped to size, masked out, then dropped into *Hyperstudio*, to lay on top of the already predefined backgrounds. *Hyperstudio* works on the principle of a pile of cards, called a stack, with the currently viewed card being at the top of the stack. User actions such as clicking an icon for example, would determine which card be next displayed on top of this stack.

I chose the default stack size of 340 x 180 because, apart from using less memory, I also had less of a canvas to paint on, which was good, considering the time I was spending on correspondence and reorganising of the CD contents. I hardly, if ever, tested my interface on the other platforms, which lead to rather dire consequences, as those of you who happen to own Macs or PCs will already be aware.

Due to the amount of graphics I was using, it was important to divide each stack according to category, so that machines with minimal memory could run them without trouble. To be more sure, I downgraded the graphics to 8-bit 256 colour quality. *Hyperstudio's* superb OLE (Object Linking and Embedding) facilities made 'on the fly' editing of graphics much easier and saved a lot of time.

Once the stacks were completed I tested them as thoroughly as possible, making sure button links worked, graphic objects lined up perfectly, and no mistakes had been made in the design process. It was here that I began the transfer of stacks to the Macintosh and PC. This is a simple matter of adding a /STK suffix to the filename in *Hyperstudio's* save box. The software then automatically converts the stack into a single file, rather than the application style folders which the Acorn native stacks consist of. I saved two sets of files, one for the PC, the other for the Macintosh.

Cross-platform problems

I had been warned in the supplementary documentation that not all of *Hyperstudio's* features could transfer successfully between platforms, such as link names, which were duly wiped out. This meant having to relink all my buttons again, otherwise they would not function. Problems such as these may already be a thing of the past, as all three versions are updated regularly.

I soon hit one of two big problems, which I shall try to explain briefly. On the Acorn version of *Hyperstudio*, file directories could be linked to buttons, so that clicking the button would open that directory. But the Mac and PC versions do not have this facility. The only way round it was to somehow build some exe- ➤

cutable files to force directories or folders to open. I did not know how to do this, so the interface was now rendered technically useless. Wonderful.

Explicit pathnames

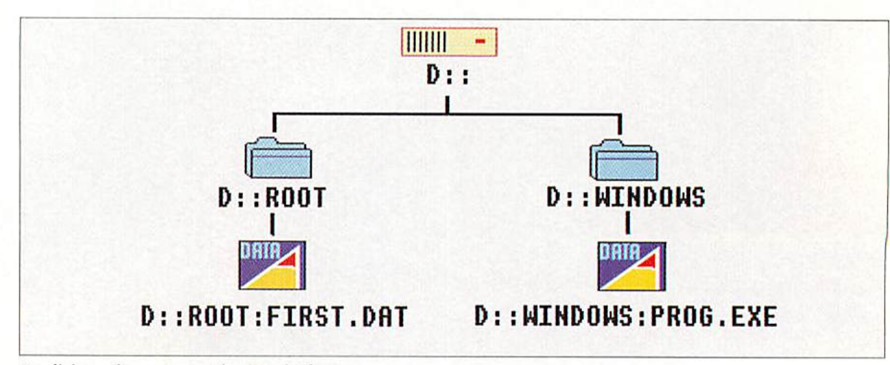
The next problem is what caused the Mac and PC stacks to fail completely. The problem concerns that of explicit pathnames. Explicit pathnames are the full location of a file on a hard disc, including the name of the hard disc. Both platforms rely on them heavily. The Acorn has a wonderful system of using relative pathnames, where you can move a set of files to anywhere on a hard disc, as long as the basic structure of the files are left alone, as the name of the hard disc or storage medium is never accounted for.

On the other platforms however, this is not the case. Due to the open nature of the PC, you cannot know for certain whether drive D: is actually the CD drive. It could be drive P, Q or any letter in the alphabet. On the Mac, you can actually give names to your devices, just like on the Acorn, but there the similarity ends.

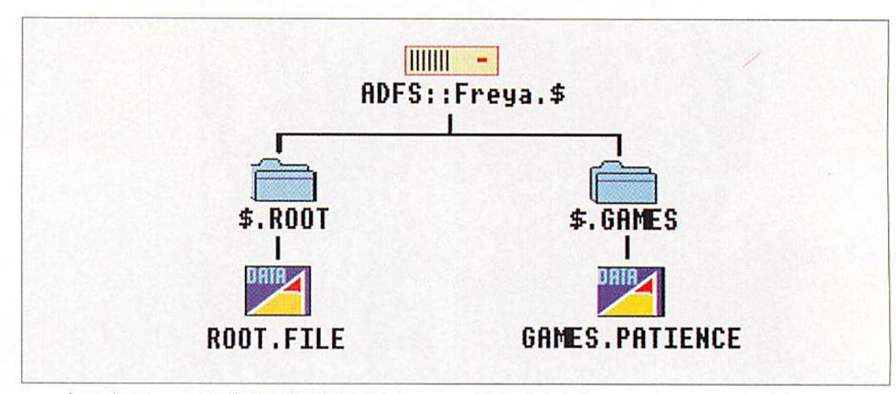
The theory goes as follows: to get the stacks to link properly, the stacks would be burned onto the CD-ROM, then loaded into the relevant versions of *Hyperstudio,* relinked and then saved back onto the CD-ROM.

The problem is you cannot do this. CDs can only be written to once. If the stacks are linked from the hard disc, then the name of the hard disc on that particular machine would also be saved. If the files were then burned onto the CD, upon running them from any other PC, they would try to find the hard drive as explicitly named in its data strings, resulting in file not found errors.

I did not want that to happen, so I resorted to editing the files by hand, using a copy of *!Zap*. I edited the filename links so that they linked to a file on a CD named AUCD3 (or, in the case of the PC files, a CD in drive D, which I assumed to be the standard location for the CD drive). I then saved them, and used Acorn's *ISOForm* program to check the hierarchy of my allocated CD-ROM directory on the A7000+, and produce a CD image for gold mastering using a Mac based program called *Toast Pro*.



Explicit pathnames on the PC platform...



...and on the Acorn. Much simpler, is it not?

Corrupt files

As I later discovered, my hackneyed approach to stack linking only resulted in corrupting the files, rendering them totally unusable, something which really annoyed me. I made various other discoveries after the gold master was duplicated.

The Acorn intro stack which listed the contributors names had also been corrupted by gremlins, and the *Destiny* demo which I had hoped would be runnable directly from the CD did not run, due to its attempt to save a configuration file. And for those of you who have found the text to be unreadable on your screen, I found out that this was due to the fact that I had been using the font background blending facility on the A7000+ while authoring the interface.

If you have an earlier version of RISC OS, then the fonts will not be blended, resulting in the bad quality text. The solution? Get hold of a later version of RISC OS, or grab hold of the Acornsoft Beta CD, as it includes a font manager capable of font blending. The difference in quality is remarkable.

Check with a fine toothcomb

From producing this CD-ROM, I learned a lot about the perils of cross-platform multimedia. By not testing the work constantly throughout, you risk hitting a minefield of catastrophes that can make or break your product. In other words, never assume, and never trust your final product until you have gone through it with a fine toothcomb.

I learned that *Hyperstudio*, despite its many virtues, is not advanced enough to be used for authoring CD-ROMs. It is perfectly adequate for self-contained projects, and the Internet if you have the Mac and PC versions, but for the write once-only medium of CD-ROM, the software cannot cope. It is not unique to *Hyperstudio*. *Macromedia Director*, for example, is provided with facilities specific to cross-platform authoring, to help you ascertain, for instance, the pathname of your CD-ROM drive or hard drive on your PC or Macintosh, so that work can be run without query boxes constantly appearing on the screen.

Any problems

On my website, I have set up a FAQ which addresses common problems found on the CD-ROM. I am also preparing a section specifically related to cross-platform factors, which should be online by the time you read this. The address is shown below.

Perhaps for the next cover CD-ROM, *Director* will be used to create the interface, and the Acorn *Director* player will support a later version than the Beta CD release allowed. This will leave a wonderful opportunity to create multimedia that really can run across platforms, even from the constraint of a compact disc.

However, I am very pleased with the end result, considering that it was my first work. And personally, it is a credible addition to my CV. It was a good feeling to see it on the shelves in WHSmiths. I took my camera and recorded the moment for posterity. From the few comments I have received, all of them have been positive. TAG liked it – a few copies of *Hyperstudio* were sold at Acorn World on the strength of it alone.

So, here's to the next even better cover CD. AU

Contact details

Stephen Scott
E-mail: banwackerin@hotmail.com
WWW: http://www.geocities.com/SiliconValley/Pines/2760

Product: Hyperstudio
Price: From £99 inc. VAT
Supplier: TAG Developments Ltd
Tel: 01474 357350

Members only

Neil Spellings gets us up-to-date with the Acorn club scene



It has been a busy few months for the Association of Acorn User Groups. Here is a round-up of the news and events from the Acorn club scene.

Success at Acorn World '97

The Association made its first public appearance at Acorn World '97 where all user groups were given the opportunity to represent their club at the show. Several of them were present including Surrey and Sussex, Derbyshire, Northwest London and Essex. Clubs who attended seem to think the show was a success for them and many have gained new members as a result of the publicity available to visitors.

Thanks go to The ARM Club for providing stand space for the Association and help with the organisation of the stand. Those who visited the Acorn Technology Theatre on the Acorn stand may have caught a glimpse of me being interviewed in a very dodgy tie and suit filmed at Finsbury Circus in London.

While the individual clubs were chatting to visitors from their respective counties, I was busy collecting details from visitors from areas of the country (and world, for that matter!), that are not currently served by a local Acorn user group. As a result, I have identified the regions without a local user group where there is the most interest in forming one. These are: Loughborough, Birmingham, Southwest Wales and the South West of England (Exeter). If you live in or around one of the above areas, and would be interested in joining or perhaps even running a user group, please contact the Association. Contact details are at the end of this article. You can also visit the AAUG website where you can register your interest on-line.

If your area is not listed above, but you are still interested in joining a local user group, I would still like to hear from you. There may be many more people like yourself all thinking the same thing, in which case I'll try and get everyone together.

Association news

I'm continuing discussions with Acorn to get more involvement from them in the user group community. One result of this was that the user groups were given advance warning of the Acorn beta software releases at Acorn World to ensure they got there early.

Also, many Acorn representatives, including Chris Cox and Peter Bondar, are now touring the user groups giving talks and demonstrations of Acorns' latest technologies including the Risc PC II and CoNCord.

New groups

Since my last article, there has been a number of clubs added to the club directory. Some are long-established groups who I have only recently discovered, while others are groups which have been formed over the past few months.

One such group is the Manchester Acorn User Group, who held their first meeting in November with Chris Cox from Acorn as guest speaker. This was attended

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Events diary

Here is a round-up of some of the meetings and events being held by the user groups over the coming months. Note that not all clubs' meetings are shown here, you will need to contact the individual clubs for more details. All details correct at the time of going to press.

January 1998

2nd – Welwyn/Hatfield meeting
7th – Wakefield Computer User Group. Q and A session
13th – Bottisham Acorn User Group meeting
16th – Welwyn/Hatfield meeting
27th – Bottisham Acorn User Group meeting
29th – SARC meeting. Russell Scoates from Acorn showing the latest technologies
30th – Welwyn/Hatfield meeting

February 1998

4th – Wakefield meeting – Peter Bondar
7th – Acorn Southwest Show
10th – Bottisham Acorn User Group meeting
13th – Welwyn/Hatfield meeting
14th – Arche Acorn User Club meeting
23rd – SARC meeting
24th – Bottisham Acorn User Group meeting
26th – Bristol Acorn User Group – Oregan Developments
27th – Welwyn/Hatfield meeting

March 1998

1st – ARM Club Open day
4th – Wakefield meeting - Cambridgeshire Software House
6th/7th – Christian Acorn User Group - exhibiting at the Church Computer Group Roadshow
10th – Bottisham Acorn User Group meeting
13th – Welwyn/Hatfield meeting
23rd – SARC meeting
24th – Bottisham Acorn User Group meeting
26th – Bristol Acorn User Group meeting – Spacetech
27th - Welwyn/Hatfield meeting

April 1998

10th – Welwyn/Hatfield meeting
11th – Arche Acorn User Club meeting
24th – Bottisham Acorn User Group AGM
30th – Bristol Acorn User Group – Peter Bondar

May 1998

16th/17th – Wakefield Acorn Spring Show
26th – SARC meeting

An up-to-date diary of events and meetings can always be found on the Association website.

If you are looking to join a local user group, many offer 'guest' attendance at their meetings so you can get a taster of the club before committing yourself to membership.

by over 50 people – not bad from a single posting on the Internet – let's hope MAUG grows into another successful user group. The next meeting is planned for January.

Another example of how it only takes a dozen or so people to start their own user group is Loughborough students Acorn User Group who have formed with an initial 10 members. Let's hope more groups of Acorn users follow their example and get together to start their own club.

Design a logo competition

As you can see, the Association now has a logo. All the user groups voted for their preferred logo from the entries submitted by readers of *Acorn User*. The winning entry is from Tim O'Mahony from Surrey. Congratulations go to him. He wins a bundle of Acorn software kindly donated by various suppliers. Thanks to all those who entered, the quality was outstanding and it was a tough job picking a winner.

Discount scheme

One of the aims of the Association was to centralise the various discount schemes many of the individual user groups had set up. This has been completed, and members of all the user groups on the table below can now benefit from substantial discounts from many of the major Acorn suppliers including Computer Concepts, Clares and Spacetech.

If you already belong to one of the user groups, and would like details of which companies are offering discounts, ask your committee or visit the AAUG website – URL at the end of this article.



Contact details

To contact the Association of Acorn User Groups:

E-mail: neil.spellings@argonet.co.uk
Website: http://www.argonet.co.uk/scs/AAUG/
Telephone: 0171-568 1117 (daytime)
0181-291 5089 (evenings)
Fax : 0171-568 4473 (FAO Neil Spellings)
Post : 82b Bovill Road, Honor Oak Park, London SE23 1EJ

If you are interested in joining one of the user groups listed on these pages, please contact the individual club. However if there isn't a user group in your area or you are a user group that is not listed above or you are a developer/supplier that wishes to take part in the discount scheme, then contact the Association.

Club name	Contact	Address	E-mail
Acorn Enthusiasts Group	Neil Farnham Smith	Internet-only group	neil@a-e-g.demon.co.uk
Acorn Users Auckland	G Plumpton	35 Laurie Avenue, Parnell, Auckland 1	johnb@ihug.co.nz
Acorn User Group Austria	Peter Bauer (Secretary)	3420 Kritzendorf, Haupt strasse 101, Austria	101670.1736@compuserve m
Arche Acorn User Club	Carlos Michael Santill		cm@arcsite.de
ARMada	Mirko Vidovic	47 rue Alexandre Dumas, 75011 Paris, France	mirko@armada-fr.net
BeebNet	Hank van der Wijngaart	8 Anzac Street, Salisbury Heights, 5109, South Australia	Hvanderw@ozemail.com.au
Big Ben Club	Herman Corjin	Postbus,1189, 6801 BD, Netherlands	bigbenpr@nedernet.nl
Birchwood Computer Club	Nigel Barrett		bcc@c3po.demon.co.uk
Blackpool Computer Club	Maureen Lewtas	11 Cedar Ave, Thornton Cleveleys, Lancs. FY5 2HZ	lewtas@enterprise.net
Bottisham Acorn Usergroup	David McDowell	9 Chestnut Close, St Ives, Huntingdon, Cambs PE17 4UQ	Mcdowell@intecc.co.uk
Bristol Acorn Risc User Group	Jack Evans (Chairman)	3 Thorndale Court, Bristol. BS8 2JA	jack@snave.demon. co.uk
C Acorn Usergroup	Paul Field	346 Chadwell Heath, Chadwell Heath, Romford, Essex. RM6 4YH	caug@accu.org
Canberra BBC User Group	Victor Markwart	16 Cruikshank St, Wanniassa ACT 2903	markwart@pcug.org.au
Christian Acorn User Group	Rev. Colin Randall	The Rectory, Swan Lane, Long HanboroughWitney OX8 8BT	carandall@argonet.co.uk
Derbyshire Acorn Risc Club	Mike Smith (Chairman)	The Vicarage, Brassington, Matlock, Derbyshire. DE4 4DA	DARC@mellor.prestel.co.uk
Essex Acorn User Group	Dan Glading	43 Spalding Way, Great Baddow, Chelmsford, Essex. CM2 7NZ	Dangladlng@mcmail.com
German Archimedes Group	Herbert zur Nedden		hzn@hq.gag.de
Liverpool Acorn Users Group	Dr Fred Wilburn	26 Roe Lane, Southport PR99DX	LAUG@hebbron.demon.co.
Loughborough (student) Acorn Users	Andy Boura	5 Far Lane, Coleby, Lincoln, LN5 OAH	a.j.boura-96@student.lboro .uk
Manchester Acorn Usergroup	Thomas Lowe	65 Victoria Road, Salford, Manchester M6 8FZ	thomas.lowe@btinternet.co
Nothwest London Computer Club	Chris Dunn	74 Conifer Way, Sudbury Meadows, North Wembley, Middx. HA0 3QR	chris.dunn@argonet.co.uk
Southampton Acorn Users Group	Ted Lacey	50 Cornwall Road, Midanbury, Southampton. SO18 2QZ	tedell@argonet.co.uk
Suffolk Acorn Risc Club	Paul Skirrow (Secretary)	50 Ash Rd, Onehouse, Stowmarket, Suffolk P14 3HB	sarc@octosys.co.uk
Surrey & Sussex Acorn Users Group	Stuart Bell	Horsham Methodist Church, London Road, Horsham, W Sussex	sasaug@argonet.co.uk
The ARM Club	Chris Price	FREEPOST ND6573, N12 0BR London	info@armclub.org.uk
Victoria BBC Users Group	Ted Robinson	31 Curtin Avenue,West Brunswick, Victoria 3055	vicbug@vicnet.net.au
Wairarapa Acorn Usergroup	John W Dagg	c/o John W Dagg, 39 College Street, Masterton 5901	jwd@winz.co.nz
Wakefield Computer User Group	Chris Hughes	95 Cumbrian Way, Lupset Park, Wakefield, W. Yorks	wacg@cumbrian.demon.co
Wellington Acorn Computer Club	Peter Browne (President)	P.O. Box, 45-106, Epuni, Lower Hutt, New Zealand	pbrowne@clear.net.nz
Welwyn Hatfield Computer Club	Mark Empson (Secretary)	160 Heronswood Road, Welwyn Garden City, Herts AL7 3EU	jstonier@argonet.co.uk

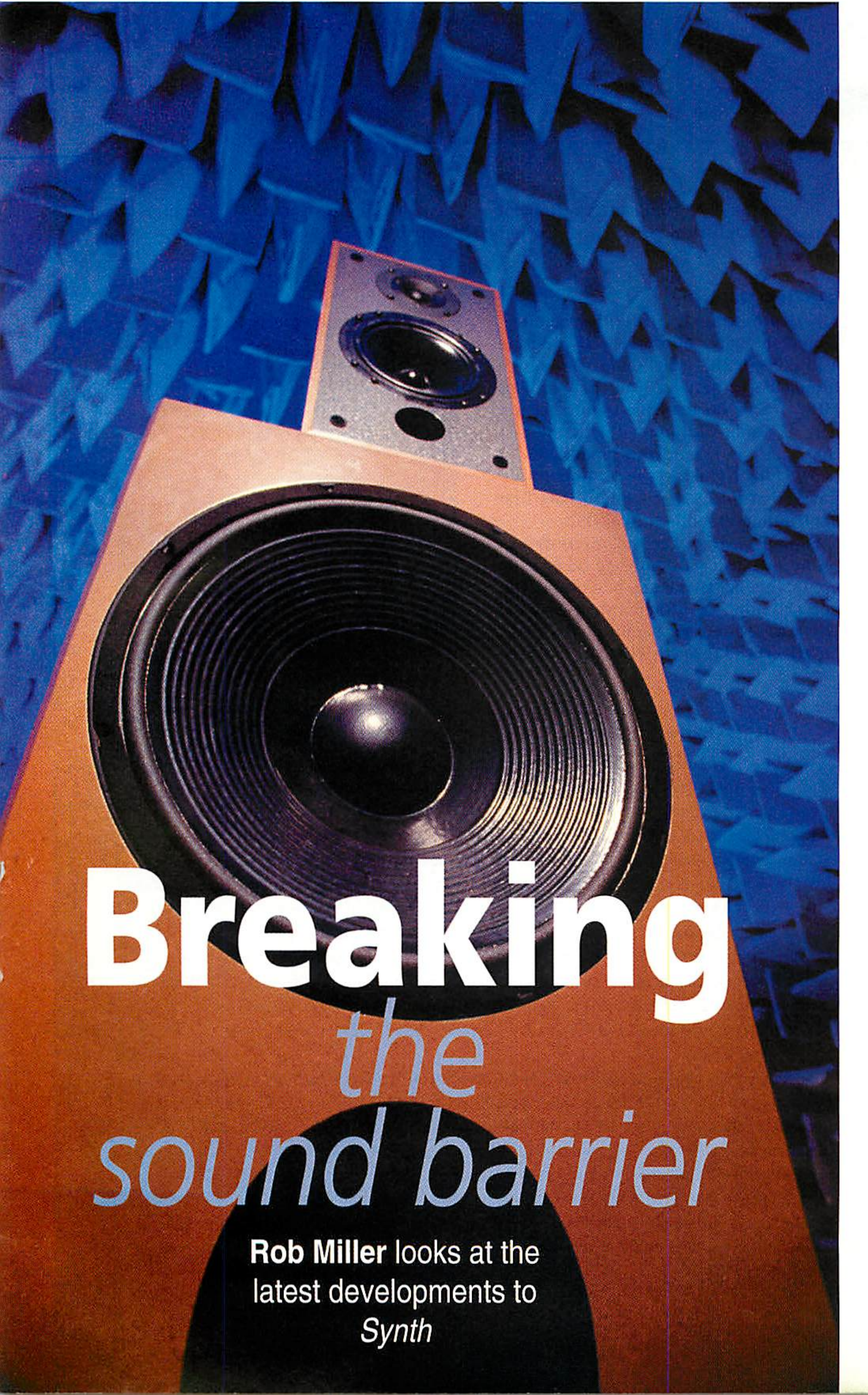
Phone	URL	Country	Meeting Freq	Members	Subs	Coverage	Notes
	http://www.a-e-g.demon.co.uk/	UK	N/A	300	Free	Worldwide	Internet only group
+64 9379027	http://shell.ihug.co.nz/~snookums/aua.htm	New Zealand	2nd & 3rd Weds	73	30$NZ	New Zealand	
+43 (0) 224336786	http://ourworld.compuserve.com/homepages/pbauer1/	Austria	Monthly	20		Austria Vienna	
	http://www.arcsite.de/arche/	Germany				Germany	
+33 1 40 240771	http://www.armada-fr.net	France	Twice per year	100	Varies	French-speaking countries	
61 8 8250 4472		Australia	1st Monday	6	Free	Metropolitan Adelaide	
+31 (0) 71 4080339	http://www.nedernet.nl/~bigben/	Netherlands	Monthly per region	600		Netherlands	
0151 430 7359	http://www.c3po.demon.co.uk/bcc.htm	UK	1st Monday	12	£10	Warrington & St. Helens	
01253 864028		UK	Last Tuesday	12	Free	Blackpool area	
01480 381996	http://www.jenkin.demon.co.uk/baug.html	UK	7:30pm 2nd & 4th Tuesdays	20	£10	Cams, North Essex, Beds	
0117 973 6237	http://emrs.chm.bris.ac.uk/ARUG/ARUG.html	UK	Last Wednesday	45	£7	Bristol, S.Wales, Wilts, Somerset	
0181 598 9676	http://www.acorn.com/associates/caug/	England	No meetings	150	£20	Global	For C, C++ and Java
	http://www.pcug.org.au/~markwart/canbug/canbug.html	Australia				Canberra ACT	
01993 881270	http://www.acorn.com/developers/explan	UK	N/A	113	£4	Worldwide	Postal group only
01629 540281	http://www.argonet.co.uk/darc.html	UK	2nd Monday	45	£15	Derbys, Notts, Staffs	
		UK	2nd Thursday & 4th Wednesday	12	£15	Essex	
	http://www.gag.de					Germany	
01704 530741	http://www.hebbron.demon.co.uk/LAUG/	UK	2nd Tuesday	30	£2 joining, £10/year	Merseyside/Cheshire	
	http://www-student.lboro.ac.uk/~phajb/lau/	UK	TBA	10	£5	Loughborough	
0161 787 7985	http://www.cybernexus.demon.co.uk/maug/	UK	Monthly	50		Greater Manchester Cheshire and Lancs	
0181 904 5106	http://www.users.globalnet.co.uk/~gds/nwlcc/index.html	UK	7:30pm, 3rd Wednesday	8	See notes	Anywhere in London	Small charge for room hire
		UK	2nd Monday	20	Free	South Hampshire	
01473 728943	http://www.octosys.co.uk/sarc.html	UK	2nd Thursday	30	£15	Cambs, Norfolk and Essex	
01403 253915	http://www.poppyfields.net/sasaug/	UK	7:30pm 2nd Monday	37	£12	Surrey and Sussex	
07010 709849	http://www.armclub.org.uk	UK	N/A	1000	£12	Worldwide	Correspondence group only
03-9386 1402	http://www.vicnet.net.au/~vicbug/	Australia	Last Wednesday	60	A$45		
(06) 377 0564		New Zealand	Irregular	18	Free	Wairarapa province	
01924 379778	http://www.cumbrian.demon.co.uk/wacg/	UK	1st Wednesday	110	£10	Yorkshire	
	http://home.clear.net.nz/pages/pbrowne/WACC/	New Zealand	4th Wednesday	24	NZ$25	Wellington region, New Zealand	
01582 767540	http://www.whcc.demon.co.uk/	UK	Alternate Fridays	35	£4	Welwyn Hatfield	

One of the most innovative products to appear in the RISC OS market recently is Expressive Software Projects' software-only MIDI synthesiser.

If you don't know about it already, *Synth* is a small application that emulates a General MIDI module and allows any GM composition to be played back on a Risc PC with 16-bit sound. When I first reviewed it back in April 1997, I had a few criticisms of the original program which ESP have now addressed. In addition to the changes, ESP have released two instrument CDs containing a whole host of new sounds and effects that can be incorporated into *Synth Plus*.

Synth Plus

In order to use the current version of *Synth Plus*, you'll need a Risc PC with 16-bit sound which means either a Risc PC 700 or a Risc PC 600 with a Minnie sound-card (ie. an Acorn sound upgrade). A StrongARM processor is also essential if you want to get the most out of *Synth Plus* and exploit its full 64 note polyphony.



Breaking *the sound barrier*

Rob Miller looks at the latest developments to *Synth*

Sound-effects

As computers have become more powerful over the past few years, programmers have begun to write software that takes over the job of what previously required dedicated hardware. DSPs (or Digital Signal Processors) are special chips designed to do fast calculations and have been used extensively in the sound generation market.

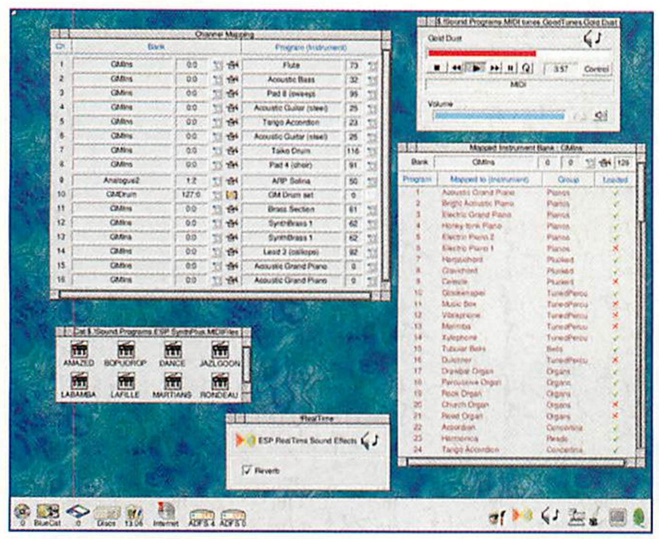
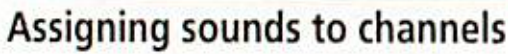
The rise in popularity of home cinema hardware (i.e. surround sound amplifiers) has meant that DSP chips are everywhere. This in turn has led to further development in audio processing software and it's now possible to produce quite a number of sound-effects (even in real-time) with just a chunk of program code.

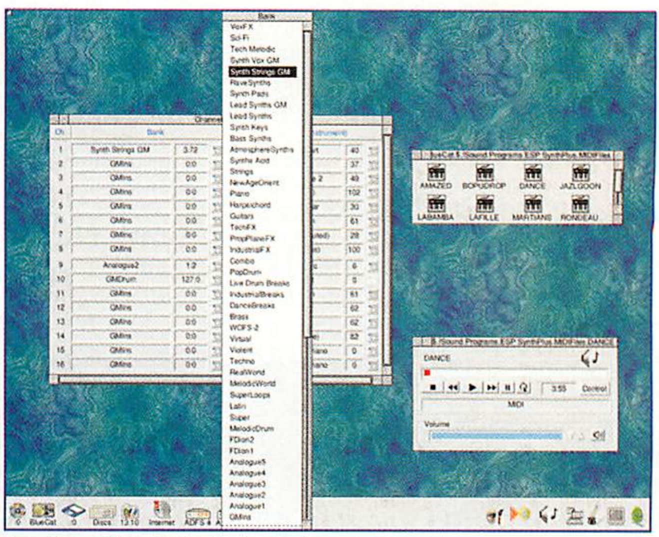
The power of the Risc PC (and especially the StrongARM Risc PC) has allowed ESP to produce albeit just one software sound-effect for *Synth Plus* – Reverb. Without delving into the complexities of acoustics, Reverb basically gives a 'fuller' sound to a noise, a bit like having a sound playing in an auditorium. A separate application which is run alongside *Synth Plus* provides a very realistic reverb effect and I would expect more such as delay or distortion to follow.

Setting up *Synth Plus* is a simple procedure and just requires the contents of four floppy discs to be copied over to your hard disc. Thinking about it, there is no reason why *Synth Plus* shouldn't work on a machine without a hard disc, although it's certainly a useful thing to have when using lots of different voices. A CD drive is also essential if you want to use the instrument extension packs (more of which later).

One of the most limiting aspects of the original *Synth* was its relatively low polyphony. This is the number of notes that can be played at any one time, and the new *Synth Plus* allows for up to a staggering 64 notes at once on a StrongARM-powered machine. This is quite an achievement considering that many professional keyboards only have 32-note polyphony, and is even more amazing when you realise that it's all done in software.

While 64 notes at once may sound a bit over the top, it's quite easy to use most of them up when playing back orchestral pieces, and especially those involving keyboard instruments such as pianos or ➤



Assigning sounds to channels


Selecting a different bank of sound

organs. Needless to say, if you have a StrongARM-powered Risc PC connected to a decent stereo amplifier, the 'wall of sound' that's possible is quite incredible.

One of the other factors that improves the sound quality over the previous *Synth* is the inclusion of a higher quality instrument set. The sound samples supplied with the first release are fine, although I never thought that they came close to any of the dedicated hardware MIDI modules available. The new set, on the other hand, sound much clearer and sharper and it's often quite hard to distinguish between MIDI files being played back on *Synth Plus* or a hardware MIDI module.

In order to make sure a piece of music sounds (relatively) similar on any GM module, the GM specification dictates that there should be 128 defined instruments available to the user. While these include a whole range of different orchestral sounds, plus a number of sound effects, it's can be often the case quite limiting. There's no provision, for example, for any decent analogue sounds which are an almost essential ingredient to much of today's modern music.

ESP have overcome this hurdle by allowing the user to patch in any sound (from an external sound library) and substitute this for any one of the standard GM instrument voices. This means that you can set up *Synth Plus* to sound just like an old Juno for example, or even include loops as your instruments. Two collections of sounds are currently available on CD and more are hoped to follow.

As well as the predesigned instruments available on CD, (an unlimited number of) further instruments can be created for use with *Synth* with the soon-to-be released MakeIns instrument editor, also available from ESP. This will allow existing sounds to be altered in a number of ways, including changing envelope parameters, loop points, stereo positioning and fine tuning. While I haven't yet seen it in operation, I would expect it to be of a similar high standard to ESP's other applications.

Summing up

Like *Synth* before it, *Synth Plus* is quite a remarkable piece of software. If you have a Risc PC (with 16-bit sound) and you're interested in delving into the world of MIDI, it's by far the easiest and cheapest way of doing so. Coupled with the fact that you can extend the capabilities of *Synth Plus* by using the add-on sound packs, I would say it's one of the best applications around for RISC OS.

Of course, if you're not interested in sound or music, it's going to be of little use to you, but if you are, buy it now and you shouldn't be disappointed. Coupled with a sequencer such as Oregan's *MIDIWorks Lite*, *Synth Plus* can form the basis of a complete music production setup. It's still not quite on a par with professional keyboards costing hundreds of pounds, but it's starting to get close. AU

Product details

Product:	Synth Plus
Price:	£49.95 +VAT
Supplier:	Expressive Software Projects
Address:	21 Beech Lane, West Hallam, Derbyshire, DE7 6GP
Tel:	0115-944 4140
Fax:	0115-944 4150
E-mail:	sales@exsoftpr.demon.co.uk
WWW:	http://www.cybervillage.co.uk/acorn/esp/
Requirements:	Risc PC, A7000 or A7000+ with 16-bit sound

ESP Instrument CDs

Two CDs are currently available for *Synth Plus* containing over 1200 instruments between them. Everything from Squelchy analogue synths to New Age Oriental pads are provided and each sound is grouped logically to make finding a particular noise easier. Some of my particular favourites are the drum loops which make setting up rhythm patterns very easy.

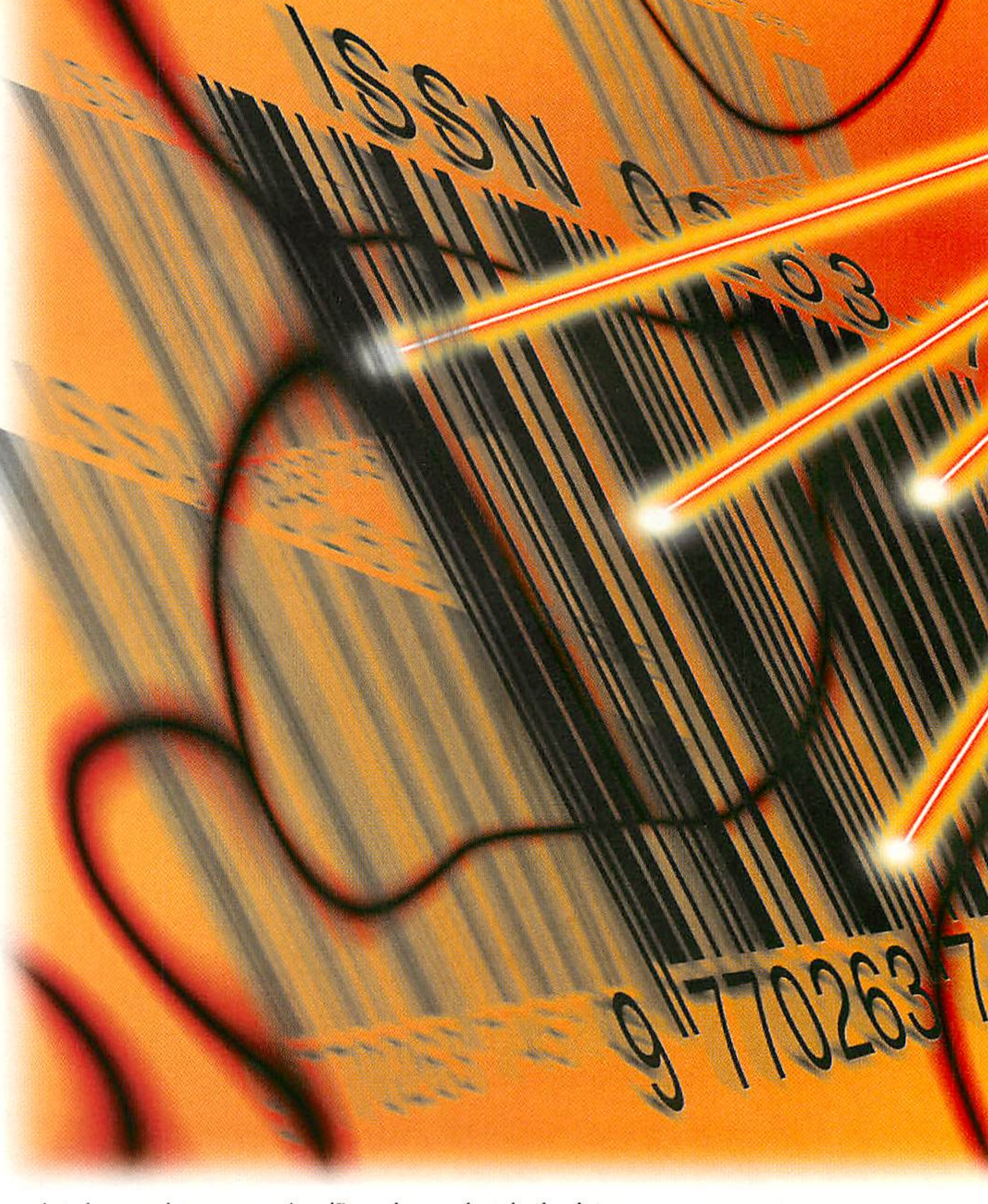
Instruments and drums are not the only things included on the CD, sound-effects are also present in abundance. If you want to add a bit of 'authentic' record static to some music, just import one of the Old Vinyl Loops and have it play alongside your composition. There are even a set of aeroplane sounds, just in case you want have an aeronautical feel to you music.

The quality of the sounds is very good, especially if they're being played back via a good amplifier set-up. and there was no audible hiss on any of the samples I listened to, apart from those which were intentionally noisy. With a few carefully selected loops and a couple of bleeps, it's relatively easy to come up with something sounding good – well, in some people eyes or should that be ears?

The only thing I had a problem with was the time it took to find just the right sound required, although over time I would imagine you'd quickly filter out want you don't need and be able to locate the correct instrument. Cataloguing 80Mb of sound samples (approx. 1260) is not exactly an easy task and ESP have done a good job. A brief list of the different sound banks is included with each CD, which helps although a complete list of each sample, plus a description would be better.

So, if you're interested in making music with your Risc PC and you want it to sound like a classic synth, or a more traditional harpsichord, ESP's instrument CDs are ideal. £40 + VAT per CD might sound a lot but it's pretty low when compared to your 'normal' sample CDs often costing upwards of £60.

Barcodes



I rather suspect that when the history of the late 20th Century is finally written, one of its greatest inventions will be missing. However, I also suspect that the packaging of the said history will have an example of this invention somewhere on it. As an experiment, and excluding this magazine, look up from where you are and identify at least five other items in your vicinity which are adorned with a barcode.

Well, unless you are a hermit who also just happens to read *Acorn User*, you should not have found it too difficult to find other examples of products containing the now ubiquitous barcode. For that reason I have not overly adorned this article with examples of something you can find almost everywhere.

I refer to it as a great invention not simply because of its simplicity and cleverness, but also because of the revolution it has brought about in the way we shop and view money. Like many Sixth Formers and ex-university students, I supported my meagre grant in the late '70s by working part-time in a local supermarket.

This was in the days before there were barcodes on products – when every item was individually priced with a price gun and individually entered via a keyboard into a till. Massive delays resulted if an item wasn't priced, mis-priced or there was a price change – as generally happened on Saturday morning!

It seems hard to believe that it was so few years ago, and how close we now are to a cashless society. It is also easy to forget the role of the barcode in this revolution. I know that revolution is almost a cliché and certainly a hackneyed phrase but I make no apology for using it.

Barcodes for all

The use of the barcode only became widespread in the '80s and the familiar pattern of black and white stripes is an icon of late 20th century consumerism. Until now we have only had access to the power of the barcode via a small number of cheap PD programs and/or very expensive PC implementations. Now, thanks to *!Barcodes* from Kang Software, users of Acorn computers have a fully working implementation.

Before thinking that this article is only of interest to those producing an item requiring a barcode I should warn you that educators should read on. Not that I am suggesting we should barcode pupils, although it would make most registrations more interesting, but that barcodes are often a subject of study at GCSE, A and GNVQ levels.

Whereas I do not want this article to become a technical exposition of the make-up and use of barcodes, some technical facts may be useful. The printed manual accompanying *!Barcodes* is actually a very good introduction to the subject. In fact I would probably strongly suggest this product for the educational software market more than for the business software market.

Too often I see projects set at GCSE and GNVQ level involving product packaging design which bear no relation to reality, where the designs would have to incorporate a barcode. The major disadvantage with a barcode is its obtrusive nature on modern packaging, but obviously the advantages far outweigh this.

A copy of *!Barcodes* running on the computers in the school IT and/or Design and Technology (Graphics) Departments would add greater realism to the implementation of many projects.

It would also stretch the more able by giving them the opportunity to consider the design when given the constraint of having to consider an element that they would not include by choice.

!Barcodes also gives students the opportunity to study check digits at A and GNVQ level. They can construct a spreadsheet to derive Modulus 11 check digits and use these to check those produced by *!Barcodes*. Equally, the composition of a barcode can reveal much important information if you can decode the data.

What do they mean?

As an example, consider the most widely used barcode which is probably the EAN-13 barcode. It is commonly used in retailing and contains a numeric prefix detailing the country of origin of the product.

Many products pretend to be foreign when they are actually manufactured in this country, for example pizzas, beer, ice-cream, chocolate etc. The EAN prefix for the United Kingdom is 50 so you can easily see how many products rely upon being foreign as a marketing ploy but are actually made in this country.

One important point which is often misunderstood is that most of a barcode is meaningless in that it contains no pricing information. The barcode is simply a pointer to a lookup table of prices on a computer. Hence the ease with which prices can be adjusted up and down and three for two offers can be made. The price only needs to be changed on the in-store computer and not at every EFTPOS (Electronic Funds Transfer at Point of Sale) terminal.

In use *!Barcodes* can produce EAN-8, EAN-13 ISSN and ISBN barcodes as well as the more specialised Code 128 BIC barcodes. The EAN-13 barcode is probably the most

Barring the way

Mike Tomkinson reports on the barcode revolution

widely used and adorns almost all retail products except those which are too small, in which case the EAN-8 is used. However, the ISBN (International Standard Book Number) and its close cousin the ISSN (International Standard Serial Number) are probably more interesting.

The ISBN is a 10 digit number consisting of a Group Identifier, Publisher Prefix, Title Number and Checksum. The Group Identifier is used to identify the national, language, geographic or other area in which the book was published (not printed). For the English speaking world this is either a '1' or a '0'.

The Publisher and Title numbers are self explanatory but the checksum or check digit (the terms are synonymous) is not. This number is calculated from the other nine digits using an algorithm. The actual algorithm is commonly called Modulus 11 and like a certain domestic bleach (with an EAN-13 number of 5000186780005) is claimed to trap 99 per cent of all known errors including the most common transposition errors.

If you wish to use a spreadsheet to perform modulus 11 arithmetic then you require the MOD function. You can then use an If..Then..Else statement to cover the exceptions, which if the result is 11 the checksum is 0, and if the result is 10 the checksum is X. Alternatively let *!Barcodes* do all the work for you.

When an ISBN is incorporated into a EAN-13 barcode it is prefixed with 978 and added without the checksum giving us 12 digits (3+9) and a full checksum to give us the 13th

EAN13 barcode generator
EAN13 barcode
Prefix 50 | Manufacturer 00186 | Product 78000
Barcode 500018678000 | Checksum 5
Save as: Barcode

!Barcodes at work – producing a barcode for a domestic bleach and calculating the check digit



The resultant drawfile of the full barcode

Outputting

The output from *!Barcodes* as a *!Draw* file is ready to be used as part of any packaging requiring it. In use the software is simple and very effective with a good user interface. Of course another one of the major advantages of barcodes as a technology is that printing tolerances are wide, and acceptable results are possible even with a 9-pin dot matrix printer, albeit with a decent ribbon.

The ISSN is used for serial publications such as newspapers or magazines. If you look on the front cover of *Acorn User* you should find a ISSN as part of the 13 digit number under the bar code – 9770263745109. The actual ISSN is an eight digit number (7 + 1 check digit). As with an ISBN the check digit is dropped and recalculated for the whole number when incorporated into an ISSN. Actually ISSNs are a bit more complicated than this but the software does the work for you and the manual explains it all.

In summary the only thing missing – and that is not a fault of *!Barcodes* or Kang Software – is the hardware to accompany the software. If it existed in native Acorn mode, probably via the serial port then we would be more than half way to a Acorn EPOS (Electronic Point of Sale).

It should be possible to implement although not that easily – perhaps I ought to have a word with my fellow correspondent Mike Cook. It certainly sounds like a job for him although knowing Mike he probably did it on a Beeb or Electron 10 years ago. Of course, if you know of such an implementation including a barcode reader fully implemented on an Acorn let me know.

!Barcodes is thoroughly recommended and for examples of *!Barcodes* output as *!Draw* files look at the KANG Software website.

AU



Product details

Product:	!Barcodes
Price:	£65 (no VAT). Call for details on site licences.
Producer:	Kang Software
Address:	c/o Location Works, 42 Old Crompton Street, London W1V 6LR
Tel:	0171-494 0888
Fax:	0171-287 2855
E-mail:	kang@locationworks.com
WWW:	http://www.locationworks.com/kang.html

Visit us on the Web! - http://www.firstcom.demon.co.uk/



DELIVERY CHARGES
- 2-4 Week Days £4.99
- Next Week Day £6.99
- Saturday Delivery £14.99

Delivery per order, not per item. Subject to availability

Tel: 0113 231 9444

Fax: 0113 231 9191 BBS: 0113 231 1422
E-Mail: Sales@firstcom.demon.co.uk

Showroom Address:
Dept. ACU, Unit 3, Armley Park Court Stanningley Road, Leeds. LS12 2AE

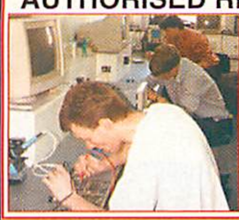
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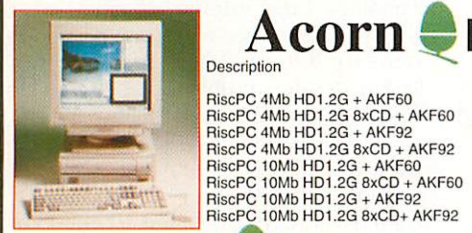
AUTHORISED REPAIR CENTRE



Our in-house engineers can offer you a no-obligation **FREE** estimate of repair on your Acorn or any computer peripheral. A delivery tariff of just £5.00 is charged or alternatively, visit our large showroom. We can also arrange for your items to be collected by courier for an additional charge of £11.00

Acorn Computers

0% Interest Free Finance On All Acorn Computers
20/20 Finance Scheme - 20% Deposit, Then 20 Monthly Payments



STRONGARM (233MHz)

Description	Our Price	Deposit	Balance	Payments No PPP	Payments with PPP
RiscPC 4Mb HD1.2G + AKF60	£1,344.99	£269.00	£1,075.99	£53.80	£57.73
RiscPC 4Mb HD1.2G 8xCD + AKF60	£1,426.99	£285.40	£1,141.59	£57.08	£61.25
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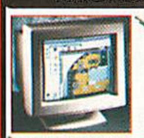
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Jack Kreindler sees what EFF's *Professional Typography CD* has to offer

The Electronic Font Foundry have been responsible for the origination of more complete typefaces than any other Acorn company. Many of their fonts are very similar to some of the great classics recognisable from a mile off (if printed big enough) but whatever you may hear about the base of EFF's designs, theirs stand alone as the largest collection of fully RISC OS compliant, hand-hinted fonts on the platform.

Many companies are now offering CD-ROMs packed with hundreds, if not thousands of poor fonts converted from PD collections. EFF have priced their CD in the same bracket but their collection provides the highest quality fonts.

Similar but different

This CD boasts almost 60Mb of font outline data. These 500 fonts can be grouped into about 140 distinct families, most with a number of 'weights' such as bold, italic, light and so on, but although each of the families has a different name, many look alike to the untrained eye.



You should not expect to find 500 highly stylised fonts all distinct from one another. This is a comprehensive, planet earth font collection with the bonus of many 'display' fonts included, not a portfolio of designs from a galaxy far, far away.

The main applications

The CD has two main applications on board – a viewer/installer and a catalogue browser. The latter allows you to glimpse at the entire EFF range and examine the pricing scheme for the individual designs. It is quite clear how much value the *Professional Typography CD* is when compared to the cost of just a single hand-built typeface.

The main application allows you to view the fonts, although this is more easily done by flicking through the printed manual, and either installing them or running them directly from the CD. Reading the font information directly from CD saves a great deal of installation time and disc space and the application also allows you to install by EFF's categories which include Old Style, Modern, Sans Serif and Script.

Judge the quality

The quality of a typeface can be judged in many ways, the most important of which are accuracy of on-screen rendering and quality of final output.

Clive Semmens, author of many fonts and *Acorn User* articles on the subject, is far better qualified than I to discuss the merits of hand-hinted fonts against fonts that have been batch processed through scaffolding software. Suffice to say that all of the EFF fonts have had skeleton lines implemented to ensure that thin parts of text always print a minimum line width. Every character has been carefully scaffolded to prevent extreme edges on the boundary of one pixel row (or column) and the next 'dropping out' to print or display asymmetrically weighted verticals or unsightly blebs on curves.

The result of the meticulous design is that all the fonts without exception are rendered on-screen true to the printed version, kern perfectly and produce clean, sharp output on anything from an inkjet to an imagesetter. The 'heaviness' of badly designed fonts and the problems that many designers find with non-compliant outlines, especially with use in graphics packages, are not issues with EFF's fonts.

And finally

My only complaint is that there are no Greek typefaces included – you must pay an extra £25 per weight from EFF. Look Systems' original *Monotype* font collections seem the better bet here.

But if the fonts available on the CD are what you require, and if they do not need to be the actual same typeface as named and licenced by Adobe or Monotype, then EFF's *Professional Typography CD* is a highly recommendable product. AU

Product details

Product:	Professional Typography CD
Price:	£69 (Private user licence), £99 (School site licence), £149 (Business user licence). All prices inc VAT. Add £1.50 p&p for overseas orders.
Supplier:	Electronic Font Foundry
Address:	11 Silwood Road, Ascot, Berks, SL5 OPY
Tel:	01344 875201
Fax:	01344 875202
E-mail:	sales@efffonts.demon.co.uk





Tesco further into school

During the last six years, Tesco have donated over £34m worth of computer equipment to schools throughout the UK. Originally known as the Tesco Acorn Computers for Schools, the initial idea was to provide Acorn equipment for schools. Since the formation of Xemplar – the partnership between the education divisions of Acorn and Apple – the scheme has been extended to provide Apple computers, PCs and other electronic products such as video tape recorders and televisions.

Tesco have announced plans to continue their popular Tesco Computers for Schools scheme in 1998 and will now provide IT training for teachers through their programme partner, Xemplar.



Tesco's Terry Leahy is proud that this long-standing scheme continues to grow in appeal with his customers and is looking forward to another record-breaking year. "One of the keys to its success", Mr Leahy continued, "has been that shoppers recognise the direct benefit it provides to the schools in their local community."

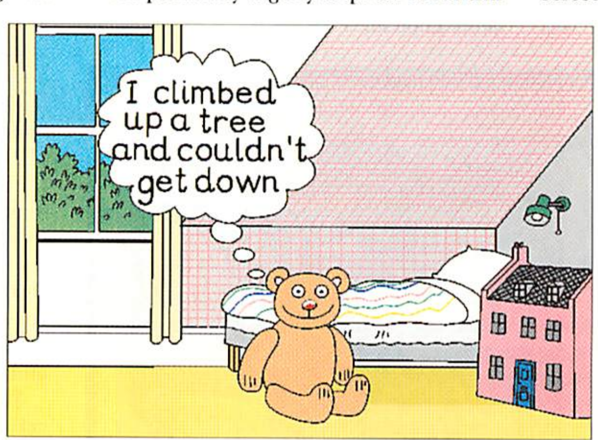
Now the scheme will be extended so that teachers will be offered two hours training for every computer claimed through the scheme.

Sherston clip art

The *Oxford Reading Tree* software, developed by Sherston, continues to be as popular as ever with material to support most of the reading scheme. Further work can now be undertaken thanks to Sherston's latest addition – *Oxford Reading Tree Clip Art* (£20 + VAT).

Supplied on four discs (two containing colour pictures and two outline only), this software is intended for continuation or extension work. The A5 manual provides both instructions and guidance for using the clip art. Essentially there are three lots of clip art in the packs: Backgrounds, items and words. The idea is to begin by loading a background or scene, then drag the required items on to the scene and finally add the words to form sentences by dragging them onto the scene.

It's a good idea to lock a grid as soon as the background is loaded. This will ensure the words line up exactly later on. The objects include the main characters from the books plus a variety of articles to scatter around. Speech bubbles are also included. The words are carefully graded to match levels of reading competence. Teachers will find this product invaluable for producing extension work for children.



I'm personally slightly sceptical about children using this type of software due to an experience I had a few years ago when I produced some geography material for Key Stage 3 students based on the same idea. I found it wasn't all that successful, largely due to the fact that many children seem to have difficulty using a mouse to the degree of accuracy whereby they can select a particular item and move it. Typically pupils accidentally selected the background and moved that (which ensured that none of the other bits were in the right place anymore), or accidentally selected the background and an unwanted item and then pressed delete, which was a common occurrence. They would then re-load the background only to find that it was now on top of the pile of objects and hence covered everything else they'd previously done. All in all, a bit of a nightmare.

However, with perseverance, I'm sure that pupils could get some valuable English work done as well as producing some very acceptable graphics and by way of a bonus, gain valuable insight into what I believe is the most powerful application built into the Acorn *!Draw*.

Sherston Software
Tel: 01666 840433

Clicker clicks on

I've written about *Clicker* lots of times in these pages so I'm not going to re-introduce it. If you don't know what it is, then you really should, because I think it should be in every primary school class in the country, at the very least.

From fairly small beginnings, John Crick has developed a whole range of applications and has just introduced some new ones based on the notion of point and click. The main reason for including this snippet about *Clicker* is as a tie-in to the previous item. Using the *Oxford Reading Tree clip art* and *Clicker*, teachers can easily (and I do mean easily) and very quickly build some superb resources to support their teaching.

I thought this was a great idea of mine. Using relevant, familiar, ready-made and high-quality clip art, teachers can produce some amazing teaching material with *Clicker* which are not restricted to their own limitations as a computer artist. I believe it's a better way of using Sherston's clip art than Sherston themselves suggest.

Remarkably, just as I was finishing off this page, I opened the latest copy of *Clicker News* (supplied free to all *Clicker* users) and what do I see on page five? A great idea for creating activities using *Clicker* and Sherston's *Oxford Reading Tree clip art*!

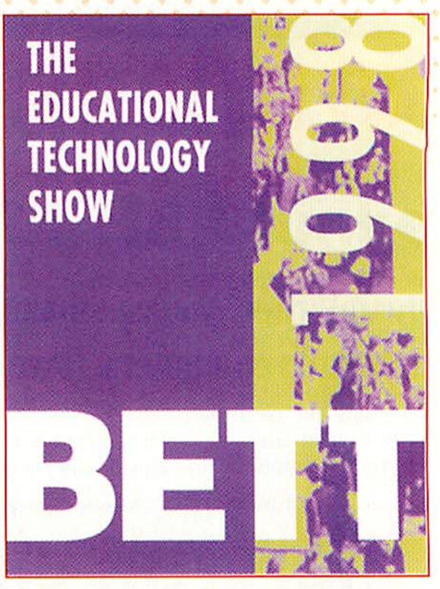
What do they say about great minds, John?

Crick Software
Tel: 01604 671691

Contacting me

You can contact the Education page by writing to me, Geoff Preston at Acorn User, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to: aueduc@idg.co.uk

BETT '98



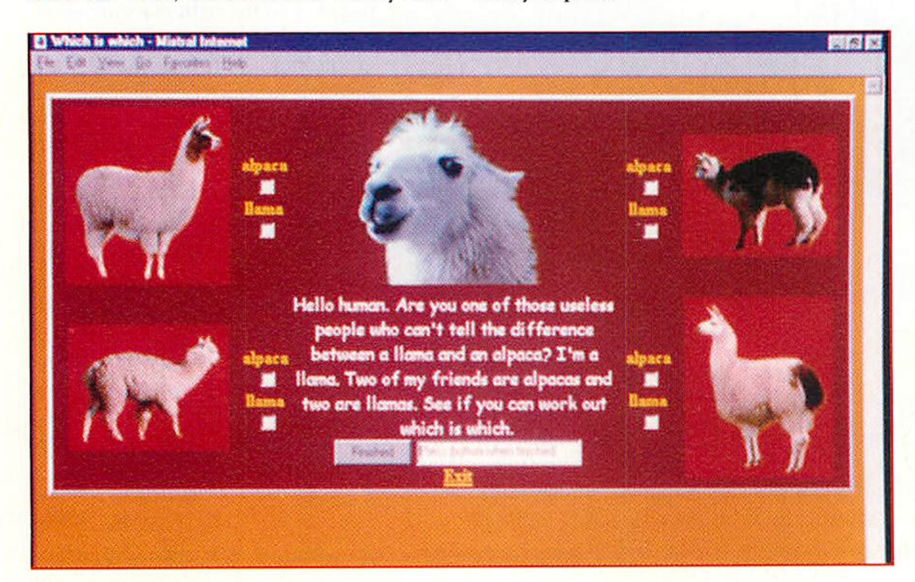
The 1998 British Educational Technology and Teaching exhibition takes place at Olympia, London from 14-17 January – **Geoff Preston** makes a few personal predications for the main educational event of the year

This year's BETT Show is going to be very significant for Acorn. Actually, to be more precise, I believe it will be significant for RISC OS. The best operating system in the world seems to be losing credibility. Software companies are abandoning RISC OS in favour of more profitable Windows software and the whole platform seems to be on a downward spiral which will lead to oblivion.

So what of the future for Acorn without RISC OS? Well, the answer is clearly NC: The Network Computer. At present it's little more than a glorified Internet browser, but not for long. If you visit BETT, and do nothing else, visit the Argo stand. There you'll see what the NC can do. One thing is sure, *Argosphere* (which was revealed shortly before Acorn World), will be fully functional and should give a true flavour of what the World Wide Web can do in the hands of a company that knows what it's doing.

Argosphere is an interactive website catering specifically for the needs of primary children. It's the first educational website of its kind and can be located at www.argosphere.com Argosphere is different because, for the first time, visitors are asked to do things rather that simply to search and read. One of the most recent additions to the site is Llama World where children can interact with talking llamas and complete some very entertaining activities and exercises.

Argosphere also comes as a welcome relief to teachers and parents who can feel safe in the knowledge that children will not access anything unsuitable. Will we see a similar site aimed at older children? I certainly hope so.



After visiting Argo and seeing their work with the NC, a visit to Acorn will be well worthwhile to see what else the NC can do. The most interesting and possibly significant development on show will be *NCworks*: an integrated suite of software for the NC which will include browser, spreadsheet, graphing and wordprocessor. Details at present are slightly sketchy, especially the launch date, but it will be on show and I believe could point the way for future IT, or ICT (*Information and Communication Technologies*) as we're now supposed to call it.

And now, a message to Acorn – don't mess it up this time. Yet again, the company have developed a truly innovative product. But as with many previous innovations from Acorn, poor marketing (or no marketing) has meant that the product has fallen by the wayside, exacerbated by the competition's superior marketing of their inferior products.

PSHE

While not wishing to labour the point, Yorkshire International Thompson Multimedia continue to produce high quality interactive CD-ROMs. Unfortunately many of these are PC only. Thankfully, one of their best offerings is also available to Acorn users. *Growing Up Together* is a two CD-ROM pack containing some superb resources for PSHE (Personal, Social and Health Education). Topics include sex education, health education, loss and separation, marriage, peer group pressure and caring for each other.

This is a highly relevant resource with activities covering essential areas of PSHE in a lively and interesting manner. The language is appropriate and presented in real life situations and family contexts using extensive video and audio. On and off screen activities contribute to structured and directed learning.

Music

While staggering around BETT '98 trying to avoid the ex-used car salesmen peddling PCs, try to meander in the direction of one of the great UK success stories of the '90s – *Sibelius*.

Sibelius Software produces world-class programs that allow anyone to compose, arrange, play, print and publish their own music.

There are four levels to suit all, from beginners to professionals. *Junior Sibelius* is for beginners and primary school children, *Sibelius 6* is for amateur musicians and is suitable up to GCSE, *Sibelius 7 Student* is suitable for A-Levels students and semi-professional musicians, *Sibelius 7* is for

professional musicians and is hailed as *the* music software.

A newly launched version 3.5 is now available and includes many new features and also new, low prices for single and network copies.

Sibelius will also be demonstrating a brand new music scanning program called *Optical Manuscript*, which allows you to scan and edit printed music. It is claimed to be astonishingly accurate and the only truly professional music scanning program available.

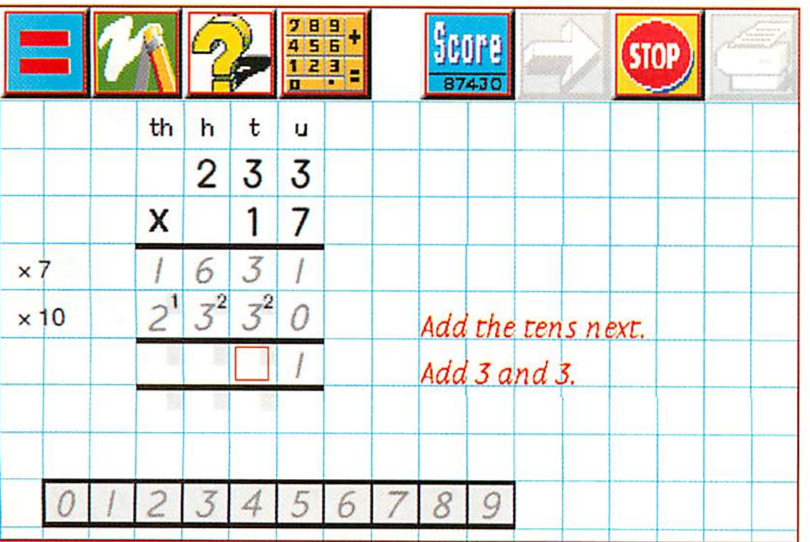
Religious Education

On stand C108 will be Wyddfa Software showing their latest software for Religious Education. Not having seen the software personally, (which is described as a talking book) I'm not prepared to comment other than to say that it does look interesting for Key Stage 1 and 2 pupils. I trust that the term Religious Education does not mean just Christianity.

Mathematics

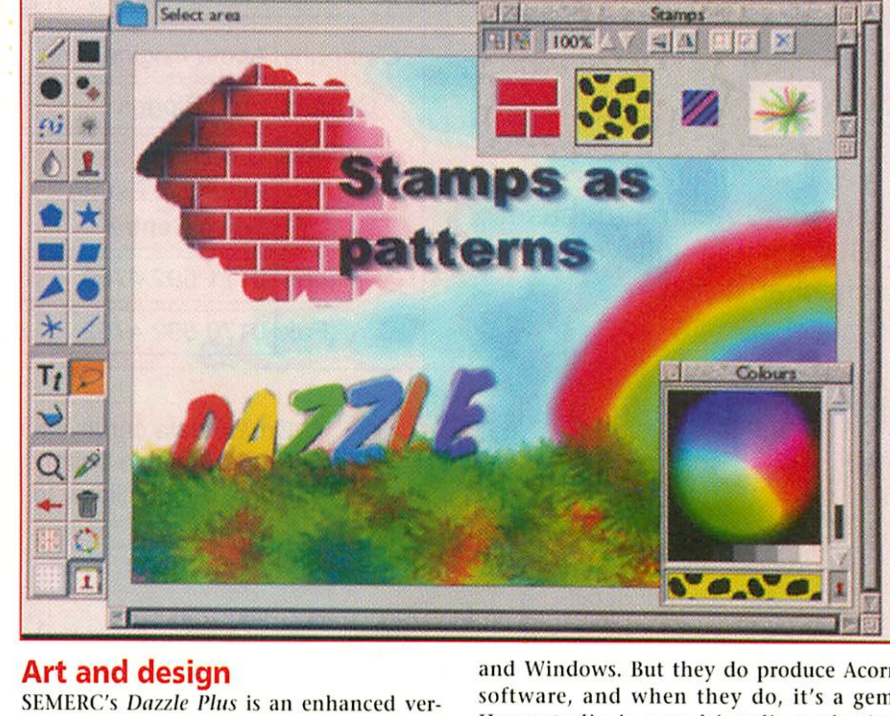
Topologika will be showing some new software to support numeracy from award-winning software designer, Marshall Anderson.

After the success of the original *Maths Book* package that gave children the opportunity to improve their vertical addition and subtraction skills, *Maths Book 2* will focus on multiplication and division.



The software constantly monitors progress and automatically tailors itself to the changing needs of individual children by selecting from five levels of help and seven levels of difficulty.

Both activities begin with simple problems and work up to long multiplication and division. Detailed results can be printed out at the end of each session and children may request a personalised worksheet to complete away from the computer.



Art and design

SEMERC's *Dazzle Plus* is an enhanced version of *Dazzle* for Key Stages 1, 2 and 3. Creating eye-catching and colourful illustrations quickly is a reality with this superb program. New features include a spray gun, a clone brush for photo-retouching and a facility that allows users to draw or fill in objects using miniature pictures called stamps.

Also from SEMERC is a head operated mouse for special needs users unable to use their hands. It is a low-cost infra-red device and suitable for all Acorn computers.

Considering what it costs, *Draw* is a superb program. But it is, as one colleague described, a flawed gem. iSV apparently agree and so have produced *DrawWorks Designer*. It's important to note that this is not an upgrade but an add-on to the existing *Draw* program. It adds such things as floating toolbars, online help, faster object linking and embedding, better path editing, named colours, moulding and a variety of default options.

For just over £30, *DrawWorks Designer* brings *Draw* fully up-to-date.

Multi-media

Most of TAG's catalogues (both primary and secondary) refer to software for Mac and Windows. But they do produce Acorn software, and when they do, it's a gem. Hyperstudio is a multimedia authoring program which runs on all platforms and files created on one platform should run on another platform.

Of all the multimedia tools available for Acorn, this seems to be the most versatile and has all the features including Internet connectivity and cross-platform support. The graphics supplied with Hyperstudio are also stunning and the numerous extensions available make it a very versatile application. The list of names who have created Hyperstudio applications include the London Borough of Hackney, Xemplar, Kingfisher, The Royal Bank of Scotland, West Yorkshire Police and, of course, Acorn User.

National Grid for Learning

The buzz phrase this year is the National Grid for Learning. As you wander around BETT '98, you will see it displayed and hear it quoted with monotonous and probably alarming regularity. The question you should be asking those who use the phrase to advertise their wares is, "What do you understand by the National Grid for Learning and how do you see your product supporting it?" I wonder how many people will begin their answer with, "Ah, yes, well, you see, I believe..."

Further info

Ticket hotline: 0181-240 5051

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(*Calls will be charged at 50p per minute at all times.)

WWW: http://www.emap.com/bett/

Primary

document processing

Geoff Preston takes a look at the latest incarnation of Logotron's popular wordprocessor

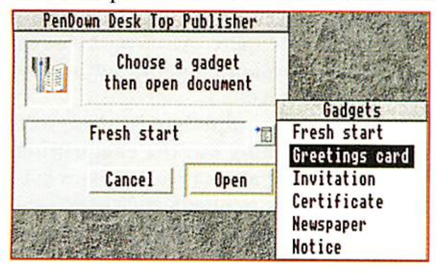
Since its launch, *Pendown* has proved extremely popular in primary schools, and more recently in some secondary schools. It has appeared in a variety of guises offering a range of different features, but the latest, *Pendown DTP*, contains all the features of all previous versions (except the French *Pendown Etoile*) plus a couple of new features.

Installation

Pendown DTP is supplied on four double density discs along with an A4 instruction manual. Installing the main program is simply a matter of copying the software from the distribution discs onto a hard disc.

On the main disc is some extra software, the most important of which is a folder called Gadgets which contains a number of blank documents. The Gadgets folder should also be copied across onto the hard disc and placed alongside the main program. There is also a folder containing the now obligatory clip art which should also be copied.

The second disc contains the spellchecker program which can be installed in the same folder as the main program, or omitted if desired. There are also a couple of folders on the second disc containing some useful bits and pieces like a spritefile correctly set up and ready for an animation.

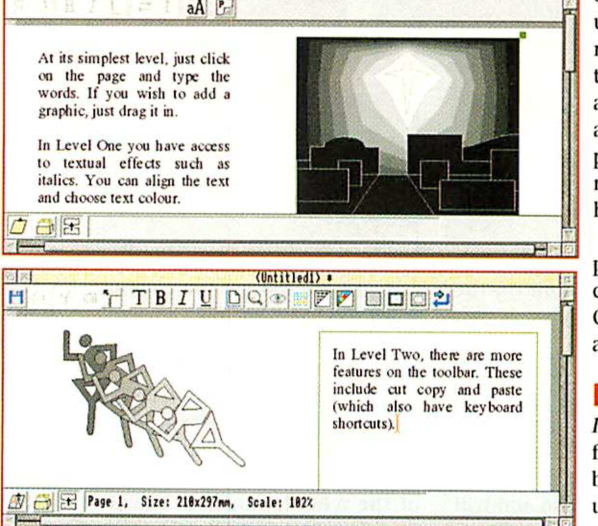


The third disc contains the HTML extension and this has to be installed in the current version of *Pendown DTP*. To ensure it installs correctly, the computer should be switched off after installing the main software otherwise the HTML installed will try to upgrade the version of *Pendown* on the distribution disc. The installation process also places a conversion program which will work independently of *Pendown DTP* to convert *Pendown* documents to HTML. Also on the disc are a couple of HTML examples and some documentation about using *Pendown DTP* to create Web pages. The fourth disc contains instructions and tutorials in *Pendown DTP* format.

Pendown DTP in use

The most striking feature of *Pendown DTP* is that it can be used in several distinct ways, or levels, as the manual refers to it. This feature alone makes it especially suitable for the very young enabling the program to be set up with the minimum features. For older children, higher levels introduce more sophisticated features. Levels can be created but initially three are provided.

At Level One, the *Pendown*-style toolbar will be familiar to users of previous generations of the package. Starting writing couldn't be simpler: Just click somewhere on the page and start typing. The default document is an A4 portrait page although there are others.



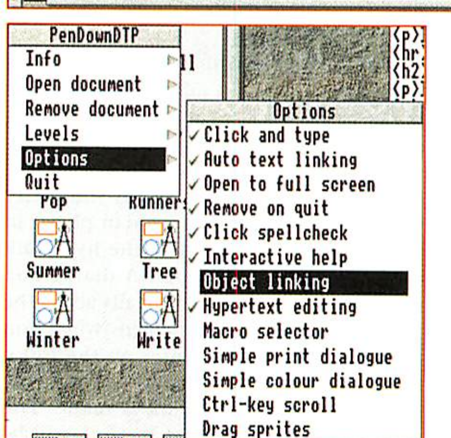
At Level Two, simple frame-based DTP tools are available. The toolbar contains more tools and there are drag and drop page layouts.

At Level Three, all the powerful functions are available. These include multiple floating toolbars, hypertext linking, mail merging and animation.

Layouts

Once loaded, clicking on the application icon on the icon bar opens a window, offering the user a choice of layouts. For most uses, the plain A4 page will be selected, but there are others. Newspaper is a page set up in columns. Choosing this opens a dialog in which the user types the name of the newspaper. Next s/he enters the date, then the headline and finally the by-line. Once all have been entered, the page is displayed with the elements in place. All the user has to do is type in the story.

A similar arrangement is provided for an award certificate and a greetings card. Other documents may be created and added to the list.



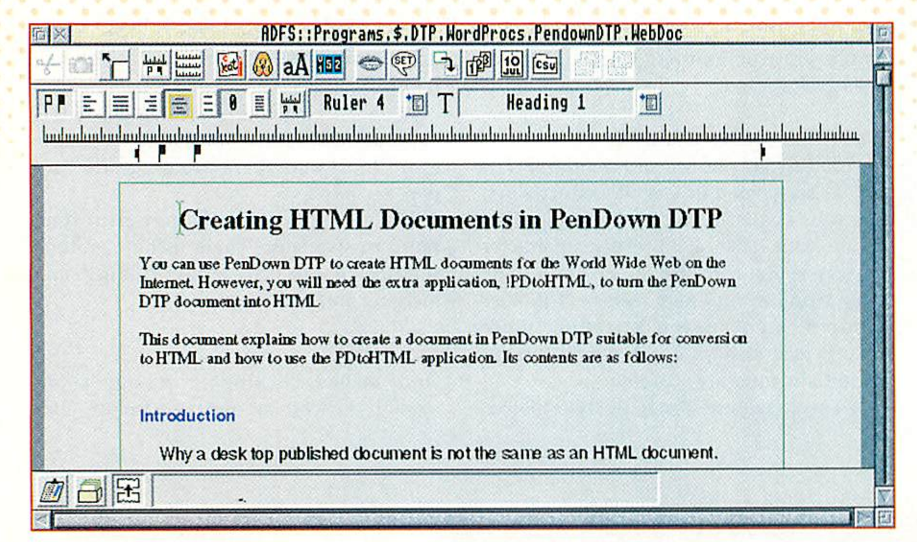
Features

Pendown DTP is loaded with features, some new and some based on features familiar to users of other *Pendown* programs.

HTML

Hypertext markup language is the language used to create Web pages for the Internet, *Pendown* supports this language making Web page creation relatively simple. Once a page has been created in *Pendown DTP*, it ➤





Primary document processing

can be exported as an HTML document. Alternatively, load the HTML conversion program and drag the saved *Pendown* document onto the conversion icon on the icon bar. Both methods lead to a save dialog box into which you enter the name of the page and drag into a suitable space on the hard disc. The conversion is not perfect, there are some HTML features that it doesn't support, but these are outlined in the accompanying documentation on the HTML disc.

Animation

I've seen lots of animation features on a variety of programs, but none are simpler to execute than this. All you need is a spritefile containing a number of sprites. Drop the file onto a page and the program immediately recognises what you're trying to do and will sequence the sprites within the spritefile to provide a very convincing animation. The sprites must be correctly ordered within the spritefile as the program always chooses the first sprite and then the second and so on. Opening the menu offers the chance to alter the speed of the animation and start, stop or continuous running. You can even rotate the animation and it still works.

Speech

Talking wordprocessors are not new, but *Pendown DTP* can read text aloud in a variety of ways. It can read individual letters as they are typed, either by their usual pronunciation (aye, bee, see, dee) or by the sounds they make. *Pendown DTP* can also read whole words: Each time the space bar is pressed it reads the preceding word. It can also read the whole document or a marked selection.

Spell checking

The spellchecker can be used directly from *Pendown DTP* or as a separate program. If the teacher so desires, it doesn't have to be used at all. When used in conjunction with *Pendown DTP*, the spellchecker allows you to check your text in one of three ways. You can check as you type and get the computer to beep when you type something it doesn't recognise. The second is similar to the first except it will highlight words not recognised. Finally, check the entire text. The personal dictionary is a text file which is easily expanded. In fact, it's a good idea to begin by entering names that might be used by children including the name of the school, names of teachers and the names of some of the local roads.

Hypertext linking

Documents created in *Pendown DTP* can have hypertext links added. Any word or phrase can be declared as a link and clicking on it can jump to either another part of the same document, or to another document.

Creating a hypertext link is simplicity itself. You simply mark a word or phrase in the document and click on the hyperlink button on the button bar. A dialog box opens in which you enter details about the proposed action (what happens when you click on the mouse pointer on the link). When the details are complete, click the Enter button and the link is made. The word or phrase used to as the link will be coloured to show its existence.

Other features

Apart from some of the more specialised features, *Pendown DTP* has full search and replace with wildcards, text alignment, cut, copy and paste, case change, gridlock, text styles by name which include font style, weight, size and colour and flowing text between pages.

Documentation

This area, I feel, often spoils an otherwise excellent program. The A4 booklet supplied with *Pendown DTP* explains installation and system requirements adequately. It then goes on to outline the features of Levels One and Two. Finally there is a tutorial which takes the user through the processes required to create a greetings card. It is this section which could do with a little more thought. The pages are set out as a series of worksheets (11 in all) which are really too wordy and could do with a few more illustrations. I can't really imagine many pupils ploughing through them all.

My other criticism relating to the documentation is that there should be a few more worksheets outlining some of the other page layouts available. There are documents supplied on the distribution discs which cover some of the more technical features of the software. Otherwise, the documentation is adequate, rather than startling.

Conclusion

If you're looking for a heavyweight DTP to challenge *Impression* or *Ovation Pro*, this isn't it. What it is, however, is a very competent program which will offer school children of all ages every feature they could possibly want. Although *Pendown* was originally intended as a primary program, *Pendown DTP* provides all the features older children require. As such, there's no reason why *Pendown* should not be used across all key stages.

Before rushing out to buy *Pendown DTP*, it's worth checking out the competition. There are several alternative programs but I feel the only one to offer a real challenge is *Textease* by Softease so before deciding take a look at both.

• *See page 76 for our Pendown DTP special offer. You'll also find the HTML extension on this month's cover disc.*

Product details

Product:	Pendown DTP
Price:	£59 +VAT for a single user with a variety of multiple user licences available
Supplier:	Logotron
Address:	124 Cambridge Science Park, Milton Road, Cambridge, CB4 4ZS
Tel:	01223 425558
Fax:	01223 425349
E-mail:	info@logo.com
WWW:	http://www.logo.com



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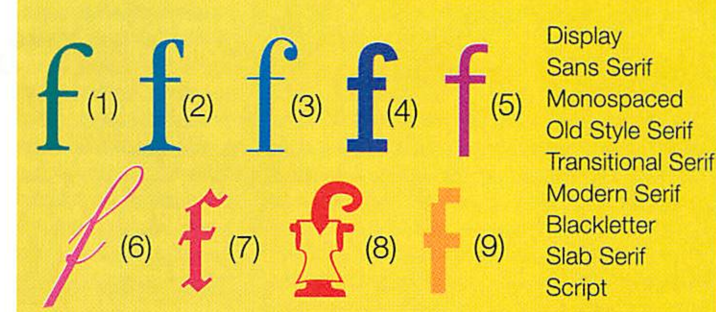
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ELECTRONIC *font* FOUNDRY

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Match the fonts with type categories (answers in the text below):



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Blackletter
Slab Serif
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Some comments on **EFF1 Professional Typography Cd**:

"Best quality... designed especially for Acorn and hinted in the Acorn way"
"Should cover just about everything you should ever need"

Archive, 11-1

"Best quality hinting around... The fonts are of absolutely top-notch quality"
"Fantastic value"
"Highly desirable acquisition, and heartily recommended... Everyone with the slightest interest in fonts should buy this disc!"

Richard Hallas, Risc User, Nov 1997

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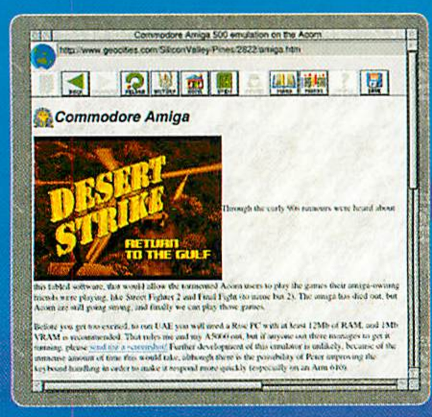
Steve Mumford looks forward to next year's games scene

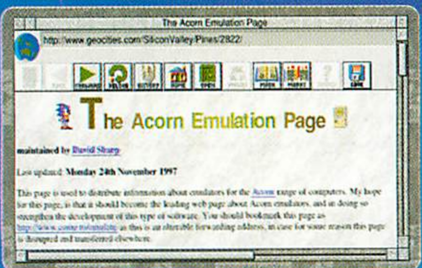
The coming year should, I hope, prove to be a most productive one for the Acorn games market – over the past few months it's been evident that Acorn themselves have been showing an increased interest in the area. Although nothing concrete has come of it yet, I'm hopeful the team at Acorn will be able to provide some form of support to those who need it.

In the meantime, the number of freeware or shareware games does seem to be increasing, along with a whole host of informative websites. If you've enjoyed using the emulators included on the latest *Acorn User* CD-ROM, this month's featured page might interest you.

The fine art of emulation

David Sharp's **Acorn Emulation** Web page has undergone a series of updates recently in his quest to make it the best general emulation page available for Acorn computers. His aims are to promote interest in the Acorn emulation scene, thereby ensuring that new products continue to be developed and released.

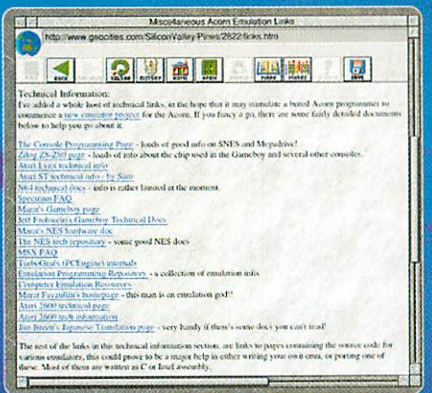




There are more emulators available for the Acorn than one might guess, and David's page does a good job of collecting all the appropriate links together. However, more than just a collection of URLs, David has tried to track down the authors concerned and speak with them about their projects. In a couple of cases this has led to some exciting announcements, such as the forthcoming Sega Megadrive and all-new PC Engine emulators.

Other information available includes a beginners' guide to the world of emulation, and an impressive set of links to technical documentation on topics ranging from emulator sourcecode to the hardware specifications of the Nintendo 64. Every machine that can be emulated on the Acorn has its own page with a brief description of the capabilities of the various packages available, both commercial and freeware, along with pointers to any relevant websites.





There's a lot of fascinating material referenced from this site, and in some places the volume of text one has to wade through can become a little distracting. The content is impressive, but I hope David can spare some time to work on the overall format of the pages – careful layout could speed navigation through the site and make the text easier to absorb.

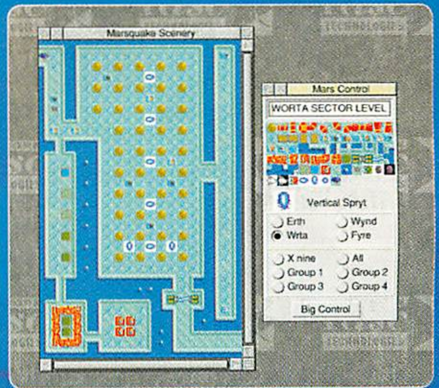
The page itself is available at *http://www.geocities.com/SiliconValley/Pines/2822* and whether you're looking for hard technical info or just the links to the latest crop of Acorn emulators, I humbly suggest you take a look.

Skating past some of the hairy legal issues that crop up with console emulation, I still think that the careful study of the games of yesteryear can provide a lot of information to the budding programmer – for instance, I'd dearly love to see someone produce an enhanced and upgraded Acorn version of a Spectrum game named *Deactivators*, a 3D puzzle game vaguely reminiscent of *Tower of Babel* to which I recently found myself uncontrollably addicted.

Terraforming on Mars

On another note, you might like to know that a *MarsQuake* level editor is now available. Written by Mike Williams (mike@econym.demon.co.uk), it allows you to load in the *MarsQuake* level files and alter them, making it possible to design whole new sets of maps. The utility runs in the desktop and lets you edit one map file at a time – by saving them with suitable filenames into the *levdata* directory of a backup copy of *MarsQuake*, you can tailor the game to your own unique tastes.

The only service you have to perform in order to use this program is to send the best of your efforts to Mike, so that he can include and distribute them in future compilations. I think this is a particularly noble cause, and I urge any of you with creative inclinations to find the package and have a go. It's available for download from *http://www.econym.demon.co.uk/other/*



And finally

I've just got time to mention that Artex, the creators of the space conquest game *Exodus*, are planning a real-time strategy title to be released in 1998. With luck, the game will appear first on the NetStation in July, before being released for the Risc PC in September. I can only guess that, judging from the NetStation release, the game will be playable over a network. It's certainly an ideal opportunity to open up the possibilities of multiplayer games to the Acorn world, and I truly hope that Artex are successful in their venture. As always, watch this space for further details.

Contacting me

You can contact me, Steve Mumford, at the usual AU address or e-mail: augames@idg.co.uk

SHOW

Repton's return

Graham Nelson reviews ProAction's reptile retread

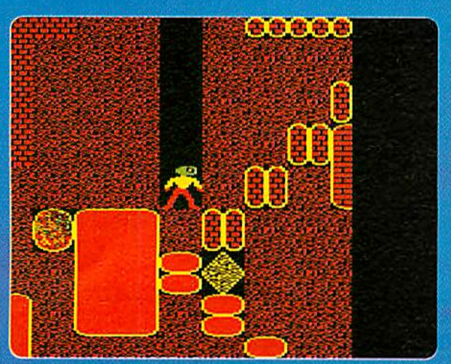
Back when *Repton* was a hit BBC Micro game, I never quite understood the title – the hero's name? A misprint for 'reptilian'? Or maybe it means the district. 'Repton Boys' Club' is a phrase still burned into my memory: I used to stare at it for the same three seconds each morning, commuting by rail through East London, just after a decrepit rubber-stamp factory and before the tracks joined.

'Repton' isn't in the dictionary, but 'reptant', which turns out to mean 'squirming along, or up, a smooth-walled narrow passage', describes the game pretty well. The hero, though humanoid, has green skin and no trouble in negotiating a two-dimensional wall of a world – like Spiderman, he climbs up or down vertical surfaces without visible means of support. These levels are filled with a kind of clay, destroyed whenever he (or she, I suppose) claws through them. However, this soft earth is often all that's supporting a great mass of boulders, which will fall as soon as they get the chance: not only will they kill anyone underneath, but block off passages, or seal off access to the all-important diamonds.

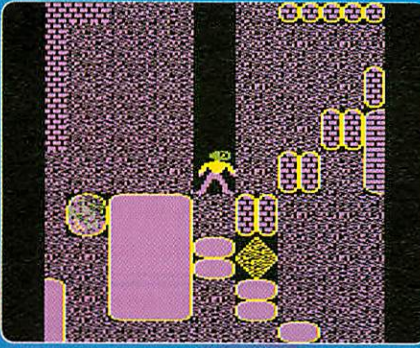
'Repton' is typical of the names that BBC Micro programmers had to invent for games whose designs they'd pinched from other machines. The original here was called *Boulderdash*, unless you count the original, the arcade game *Dig Dug*, (and so on). What makes it satisfying is that despite everything it's a logic puzzle.

On later, more monster-populated levels, you do need rapid reflexes, but most of the gameplay comes in realising that you mustn't do X until you've done Y, so that you'd better do Z while you still can, and so on. Even the monsters – which, for instance, hatch out of eggs whose shells are cracked – behave in predictable ways, following passages through the earth like laboratory mice in mazes.

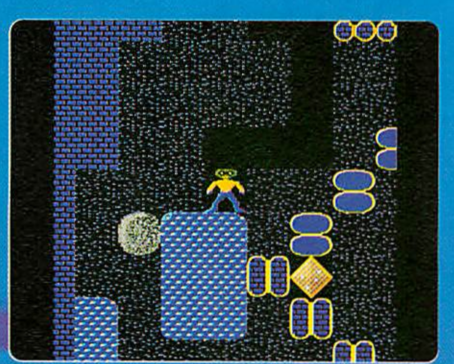
Repton (1984) was justly a success, neatly designed and with a display capable of scrolling vertically as well as horizontally (not easy under the BBC video controller chip). It led to more sequels than *Friday The Thirteenth*, as levels were redesigned and graphics redrawn. *Repton 2* (1985) was not just redrawn but enhanced, with transporters and skulls; *Repton 3* (1986) featured a level editor, which was put to immediate use. *Repton Around The World* (in 40 levels) is unintentionally quite funny. For instance, what would be the Wild West version of a boulder? (A cartwheel. The clay becomes grass, while the monsters are gunslinging lizards.) *Repton Infinity* has a sort of cinematic theme which I don't altogether follow, but the idea is that you 'direct' the levels, rather than just 'edit' them.



BBC Micro original



ProAction version



Enhanced version

ProAction's recreation

Repton Infinity was the last word for a decade and I was quite surprised to receive a reptiliferous (that's 'bearing fossil reptiles') disc from ProAction. Having licensed the original design from the descendant company of Superior Software, the latest authors have imitated the original *Repton* with great care – as the screen shots will demonstrate, the original graphics and layout are faithfully recreated. ProAction produce two versions, one of which has enhanced graphics but requires a StrongARM Risc PC.

I wish I felt more enthusiastic about this. ProAction have done a neat job and their basic model is hard to tell from an emulation of the original, while the enhanced graphics make a satisfyingly subtle improvement, just as in Darren Salt's freeware recreation of *Jet Set Willy*. There's a little more colour, a little more resolution but the screen layout and essential style are undisturbed.

And yet, at the end of the day, it's only *Repton* – not *Repton 2*, not *Repton 3* and without a level editor; the new authors haven't done much to 'add value' to their version, which has just the 12 levels of the original. Perhaps there are legal constraints. But the meanest Archimedes or Risc PC has over forty times as much free memory as a BBC Micro, and a 32-bit processor clocking over at least thirty times faster. Can it really need a StrongARM on top of all that to use a slightly better graphics mode than the BBC original? Moreover, the version I have crashes if I try to enter a password, and there's no 'return to desktop' option: you have to type Alt-Break to get out.

Enough carping, though, because this is the only legal way to play *Repton* today, when so many games are lost to the world through inactive copyrights. *Repton* is a pleasing puzzle to have, even in its most basic form.

Product details

Product:	Repton
Supplier:	ProAction
Address:	162 London Road, Romford, Essex. RM7 9AJ
Price:	£7.95
Pros:	It's Repton! • Good original design • Nice graphics if you have a StrongARM
Cons:	Rather basic • Could use a better interface



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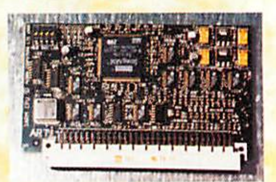
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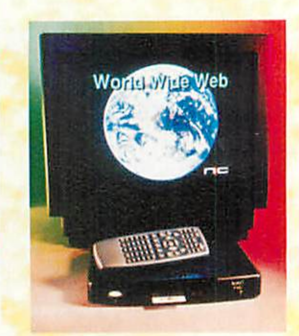
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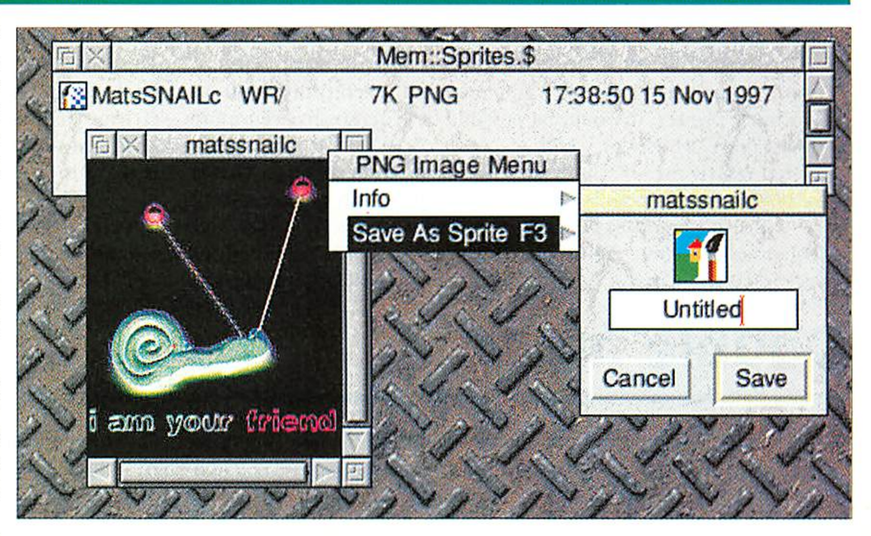
What a PNG!

Author: Tom Tanner

If you browse the Web a lot, you may have noticed a new graphics format floating about in addition to the standard GIFs and JPEGs – The PNG file. *Fresco* can display these images, but unfortunately *ChangeFSI* cannot, it cannot create PNG files either. This is where **Tom Tanner's** *Png2Spr* application comes in.

'This program allows conversion of graphics in the new PNG format to Acorn sprite files, and vice versa. Note that due to the Acorn sprite formats, the program converts 16-bit RGB colours to 8-bit RGB colours. Also, transparency is an on/off mask.

'The PNG Web pages (specifications & example files) are to be found at http://www.wco.com/~png/ (Unfortunately this page has not been working the last couple of times we've tried it, otherwise we would have supplied some more details on the origins of PNG files.)



'To convert a PNG file (type B60), double-click the file or drop the file onto the program icon on the icon bar. To save the file when converted, click the menu button over the displayed picture, and drag the sprite to where you want to save it, or type in a path name and click OK.

'To convert a sprite to a PNG file, drop the sprite onto the iconbar icon. Currently there are no conversion options, apart from the "Use Gamma" item on the iconbar menu – if this is ticked, the file is given a gamma correction of 1 / 1.8.

The icon bar menu provides a handful of controls over the format translation:

Single Task: When ticked, the program does not release control to the WIMP, it therefore converts faster. Off by default.

Use Scale: When ticked, the program uses the "pHYS" chunk in the file (if supplied) to scale the picture. NOTE: The size is not guaranteed – some method of configuring real pixel sizes in a later version. On by default.

Use Gamma: When ticked, the program uses the "gAMA" chunk in the file (if supplied) to apply gamma correction. On by default.

Viewer Mode: When ticked, suppresses queries about unsaved files on closing/quitting.

Transparency: When clicked, brings up a screen allowing you to select transparency options, as follows:

• *Ignore* - Ignore transparency/alpha channels (all pixels considered opaque).
• *Create mask* - Create a mask (pixels whose opacity is less than the slider value are considered transparent).
• *Use Background in bKGD chunk* - If bKGD chunk supplied, use it. Otherwise use the colour selected by the button.

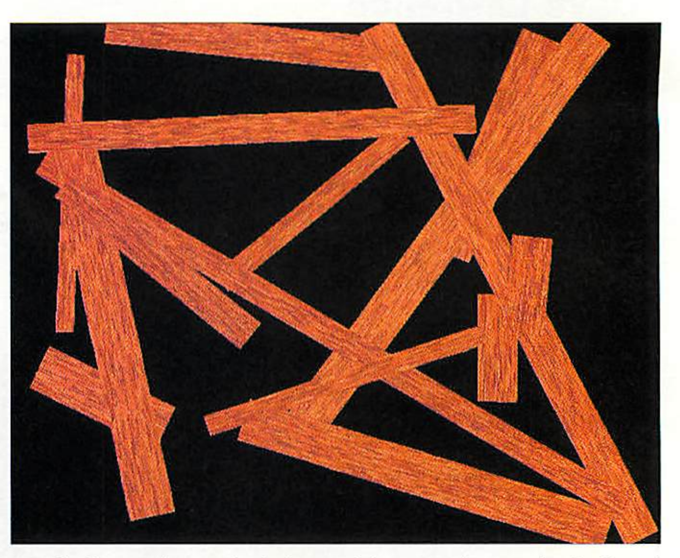
Wood from the trees

Author: Jan Vibe

You can always rely on **Jan Vibe** for a good graphical demonstration. Hang on, that sounds a tad familiar, but then what can we say about our favourite Denmarkian that we haven't said already?

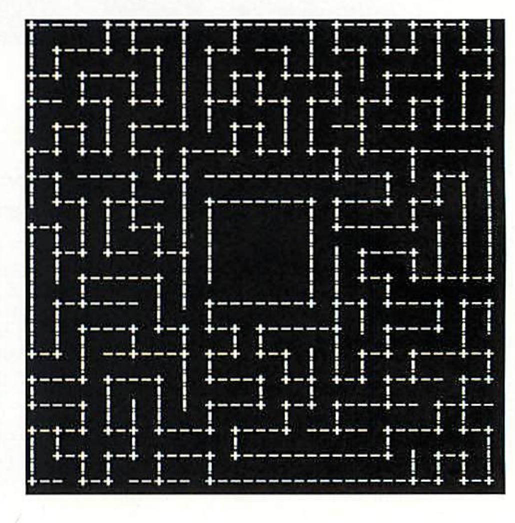
This month we have three programs from Jan starting with *TxtMaze* and *TxtMaze2*, two variations on a theme. These programs both generate random mazes, but rather than some fancy 3D affair, the result is drawn using only the characters +, -, ! and space. According to Jan, this makes them ideal for sending to people in e-mail. (There's obviously something sadly lacking in Danish entertainment at the moment, maybe we could send them Noel Edmonds...)





The mazes produced have multiple 'entrances' around the perimeter, so there isn't necessarily an obvious way in. *TxtMaze2* produces identical mazes, but the cells in the output have an aspect ratio of 3:1 rather than 1:1. This gives a squarer result when printed out on an ordinary printer. It would be possible to generate an even more compact maze, by using !, _ and .

Moving swiftly on – if you manage to escape from the maze that is – we have *Leaf*. After Jan's recent experiments with strange shrubbery - ah, that could explain it all – last month's *AlienTree* and *AlienGrass*, he's come right back down to earth with a bump, or more precisely, a twig. *Leaf* generates a realistic tree using the standard recursive method, but making use of very nice bark and leaf algorithms. The background sky is also interesting; it is a graduation between two colours, but instead of plotting each horizontal line in a solid colour, it is split into small sections each plotted using approximately the correct 'in-betweened' colour. Hmmm, nice.



Finally from Jan for the moment, is *DrawWood*. This takes the bark algorithm from *Leaf* and uses it to plot a pile of randomly sized floorboards. Very handy.

Double music

Author: Mr Adamson

Pass the maracas, it's time for quaver-head himself, **Mr Adamson**! We have a couple of pieces from the maestro, of, *Maeo...* er, *Rhapsody*: The theme from Beethoven's choral symphony No. 9 and Youth's the Season from the Beggars Opera. As usual, both tunes are supplied in MIDI format as well as *Rhapsody*.

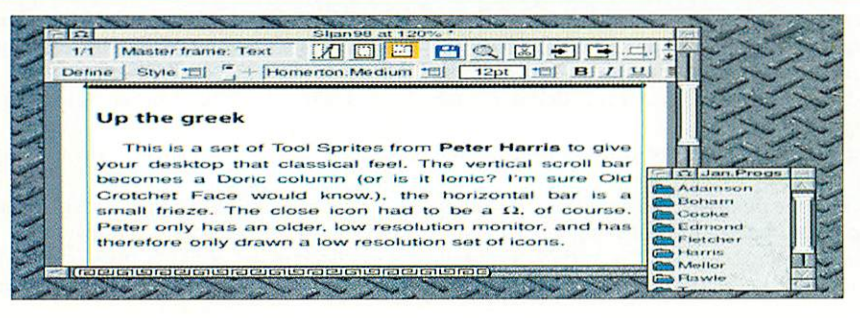
Quick – spit that chewing gum out or we'll be doing laps of the gym lawn after school...

Up the greek

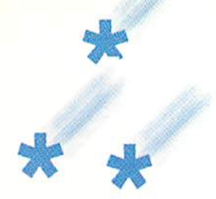
Author: Peter Harris

This is a set of Tool Sprites from **Peter Harris** to give your desktop that classical feel.

The vertical scroll bar becomes a Doric column (or is it Ionic? I'm sure Old Crotchet Face would know.), the horizontal bar is a small frieze.



The close icon had to be a W, of course. Peter only has an older, low resolution monitor, and has therefore only drawn a low resolution set of icons.



Poler face

Author: Jonathan Rawle

Desktop games are a long-standing favourite of *info, and patience games seem to be the most popular. *Poker Patience* has been sent to us by **Jonathan Rawle.**

'Poker patience is a card game for one player in which cards must be placed, one at a time, to form a five by five square. Once a card has been placed, it may not be moved. Each row and column is then treated as a poker hand (ignoring the order of the cards) and scores according to this table:

COMBINATION	UK	US
One pair	1	2
Two pairs	3	5
Triplet	6	10
Straight	12	15
Flush	5	20
Full house	10	25
Four of a kind	16	50
Straight flush	30	75
Royal flush	30	100

There are two scoring systems: The English system is the more accurate, as it takes into account the difference in probabilities when compared to ordinary poker. However, poker players may find the American system more natural, as hands are ranked as in conventional poker. The target score is 70 by the English system or 200 by the American.

For anyone not familiar with poker, the possible scoring combinations are explained below:

One pair: any two cards of the same rank

Two pairs: two pairs of cards of the same rank

Triplet: three cards of the same rank

Straight: five cards of consecutive rank, regardless of suit. Aces can be high or low (but not both)

Flush: five cards of the same suit, regardless of rank

Full house: a triplet and a pair

Four of a kind: four cards of the same rank

Straight flush: five cards of consecutive rank, all in the same suit

Royal flush: a straight flush consisting of 10 J Q K A

The order of the cards does not matter, and any odd cards are irrelevant.

Playing the computer version

Click the iconbar icon to open the main *Poker Patience* window. The first card to be played is shown in the top right-hand corner. Click in the blank part of the window to position the card. Cards can be placed in any of the five rows and columns, and need not be next to any card already played. To undo the last move made, click the adjust (right-hand) mouse button.

When a row or column is completed, the combination and its score appear, and the total is updated. At the end of the game, if your score is high enough, you may be asked to enter your name for the high-score table. (There is a different table for each scoring system.)

Net practice

Author: Justin Fletcher

Network gaming is becoming a big thing at the moment, with many games companies realising that the best games are those played between humans. Well, *NetGame* could well be the first step up the long dark slippery pole for us.

Justin Fletcher original sent just *NetOXO* to us as a standalone game. We liked the idea, but felt that *OXO* was not a particularly riveting game. (Are there any riveting games? Perhaps *'Build the Titanic'*? Sorry.) We suggested that he write our long standing fave, *Battleships*, or even the basis of a network game system, where new games could be added quickly and easily...

We're still waiting for *Battleships*, but Justin has written a set of library routines to ease the process of writing networked games, in many ways like Microsoft's *DirectX* drivers. These routines have been written in BASIC and therefore it should not be beyond most people's abilities to study Justin's examples and write some new games. At the moment, only two player games are supported.

Justin has supplied two games by way of demonstration. *NetOXO* and *NetC4*. Before you can play either of them, you will need to install Justin's shared library *JFShared*. This is available from his website http://users.essex.ac.uk/users/gerph (and also on next month's disc). You will then need to run *!Setup* to install the *NetGame* libraries and the two games above. You will, of course, also need an Internet stack running. After all this, you can play!

To run either game click on its icon, you then give it a host and port number you want to connect to, by default this is 1976. In *Connect4*, there is an icon that pops up a list of known sites. This code has not filtered back into *OXO* though, so you'll have to type in the name.

Once connected the 'other' player will have a chance to play and basically clicks where he wants to go. Then you have a go. Then he does. You sort of continue like this until one of you wins or you get a draw. Then you clear the board (press Menu and select 'Clear board') and start again. When you are fed up you can disconnect. Quitting will also disconnect, but slightly more violently...

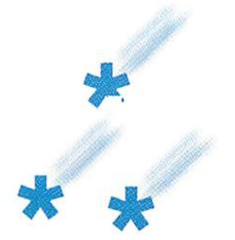
If you want to talk to your opponent – perhaps to say 'oh what a jolly good move, chap' or 'oh dear I appear to have made a mistake' (or derivatives thereof) – just click the message button and type your message, and then Return. When your opponent gets the message they can press the Close button (or press Return) to get rid of it, or R to reply to it. You can continue playing quite happily while this silly little messaging is going on...

How it works

A TCP connection is established and a message system is used to transfer moves between the two machines. Any deviation from the protocol will cause a disconnection – to prevent people just hacking it and typing any old rubbish in an attempt to either crash your computer or cheat.

The basics of it are pretty simple... Each player takes it in turns and whenever we spot a 'winner' we put up a message box and then lock the board – which can only be unlocked by clearing it.

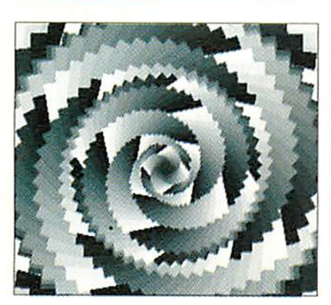
If you wish to write your own games, Justin has supplied documentation in *StrongHelp* format. Looking through this and *OXO* and *C4*, should give you the help you need.





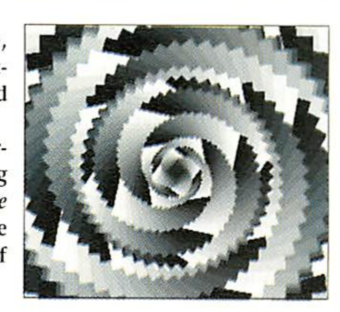
Flower power

Author: Philip Mellor



In **Philip Mellor's** own words, these are two 'highly original (?) colour cycling demos'. That old faithful effect of colour cycling to produce cheap animated displays may be old hat nowadays, but given the right canvas, it can produce interestingly different results. What's fun about *Turbine1* and *Turbine2* is that they seemingly rotate both ways at once, with some components of the pattern flowing into the centre and some flowing out.

In fact, it's only because different parts of the image are moving at different speeds. *1L_Turbine* shows that you can squash the entire effect onto one line of BASIC.



Take a trance on me

Author: Clem Edmond

You can always rely on **Clem Edmond** for a good tune. Full marks go to his latest composition – *DeepSleep*. Not only is it quietly understated and interestingly structured, it's also only 61K long, well within our 100K music limit!

It's the sort of tune that gives the impression of flying over some alien landscape at great speed – anyone fancy doing the honours?

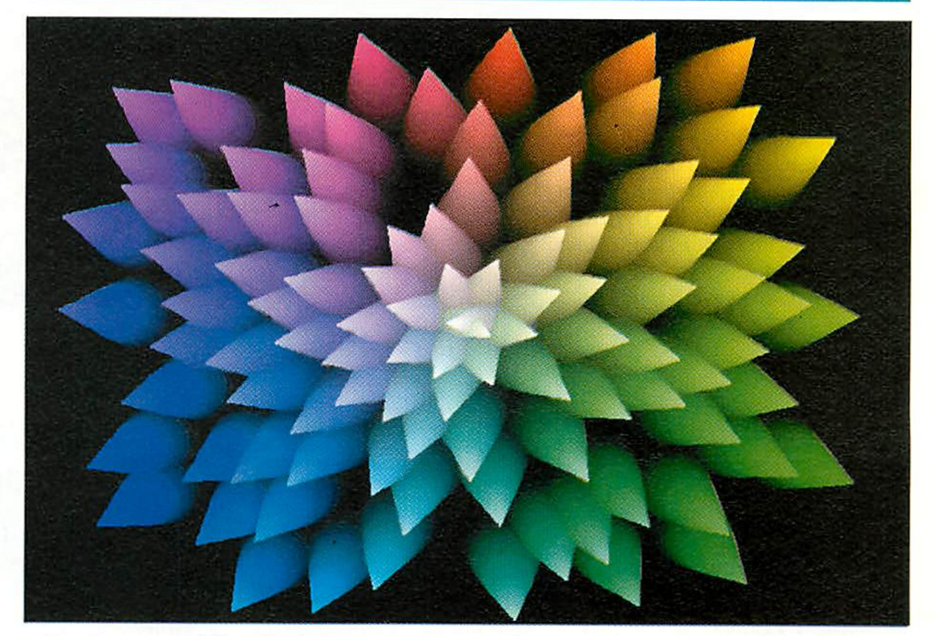
Late arrivals for the circle ball

Author: Brian Cooke

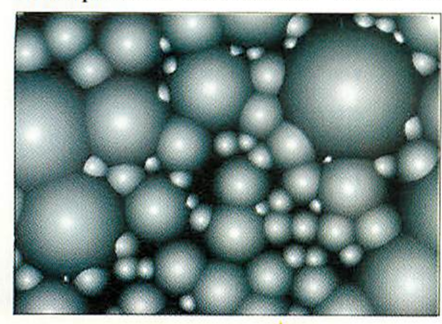
Our circle challenge lives on! Despite the deadline being almost a year ago, we are still receiving entries – I suspect that we might never quite reach the end.

Our two belated contributions this month come from **Brian Cooke**, a name we haven't heard for a while in *info. Both *BallPack* and *HSVpetals* were designed for Risc PCs only, but with some cunning use of ColourTrans we have produced versions for older machines.

BallPack (or *BallPack27)* generates a cluster of slightly overlapping spheres. This gives a kinda vaguely 'pebbly' effect when it's finished. The circles it plots to start with are positions of the final spheres. The co-ordinates and sizes for each are stored in an array and each new circle is compared against all those stored to ensure that none overlap. The initial radius of each sphere is 50 per cent larger than its base circle, this then gives the overlap. Once the screen is sufficiently filled, the spheres are plotted, a 'layer' at a time to get the merging effect.



Brian says that *HSVPetals* was actually a development of *BallPack* that 'went a bit astray' – many *info submissions seem to have been created this way! Another set of near-non-overlapping circles are generated, but this time a polar grid is used. Rather than store the co-ordinates of the circles, a new circle is allowed to be created if its centre point is black – i.e. not on top of an existing circle. Once 100 circles have been placed, the cones are generated, again, a layer at a time.



The colours used are based on the Hue, Saturation, Value model (hence the cunning name *HSVpetals*). Hue is a value from 0 to 360, and controls the base colour. This comes from the circle's 'A' co-ordinate in polar-space. Saturation has a range from 0 to 1, with 1 giving the full intensity colour fading out to a grey scaled with a value of 0. The circle's 'R' co-ordinate is used for this. Finally Value, this has a range of 0 to 1 also, 0 always gives black and 1 gives the colour. This value is calculated from the radius of the circle used to plot the cone.

Combining all these together gives the colourful petals. The cones change colour around the image (H is changing), they are dark at their bases (V is low) and more washed out towards the centre (S is low). All in all a good example of the HSV colour model!

The hare and the mouse?

Author: Brian Cooke

Brian Cooke's second submission this month is more useful. He said that he was doing a whole pile of template editing and was getting fed up with the inability to precisely position icons with the mouse.

This is because with a configured mousestep of six, not every pixel on the screen is visited. A smaller mousestep is what was needed, but this rapidly becomes tedious when traversing a large screen mode.

A number of accelerating mouse pointer modules are available, but take a while to get the hang of. Instead, Brian decided to write *SlowCoach*. This intercepts the keyboard up/down event, detects the right hand ALT key being pressed and sets the mouse step to two. It is restored when the key is released.

The source code of *SlowCoach* is provided. Running it will assemble the module and save it in your library. It can then be loaded by typing **SlowCoach*, you might even wish to include it in your Boot.Choices.PreDesk directory. There are no *commands – loading the module initialises the interception, RMKill'ing removes it.

It is interesting to note the hoops you have to jump through to perform this seemingly simple task:

1) Enable key event (11) with OS_Byte 14
2) Claim the event vector
3) In the event handler, check for the correct event (11) and appropriate key number (right ALT = 96)
4) Add a CallBack as we need to perform a SWI and event code is called in SVC mode
5) In the call back check for pressed/released and set the mouse step as appropriate with OS_Word 21,2

On exit, the relevant claims need to be released, making sure that any pending CallBack is also removed. Without this when the module is killed, a pending call may end up in memory that has been re-allocated!

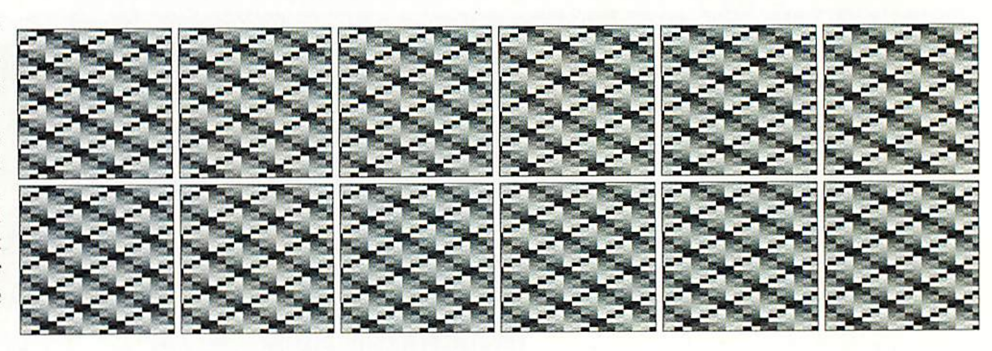
Brian points out an interesting omission from RISC OS. As far as he can tell there is no way to read the current mousestep (or mouse multipliers as they are called). OS_Word 21,2 is used to set them, but there does not seem to be a way of returning the values. To restore the old settings, the configured step is read from CMOS RAM byte 194, using OS_Byte 161.

We do wonder why Acorn never produced a 'Mouse' module with some nice, straightforward SWI calls – should we really still be using OS_Word in 1998? :-)

Tile end

Author: Scott Boham

Considering that *Pattern* uses only 19 ARM instructions and a small amount of BASIC 'glue', it's quite amazing what **Scott Boham's** program produces. StrongARM users may well want to slow the program down by running *PatternSA* instead, this inserts an extra delay between each frame. Without this the effect is lost. Although it looks as if colour cycling is used, it's not – the whole screen is repainted every frame.



*QUIT

All submissions, large, or small, but preferably small, and certainly not bigger than 100K please, to:

*INFO, Acorn User, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP or, if your submissions total 100K or less, e-mail us (including your real address please) at: austarinfo@idg.co.uk

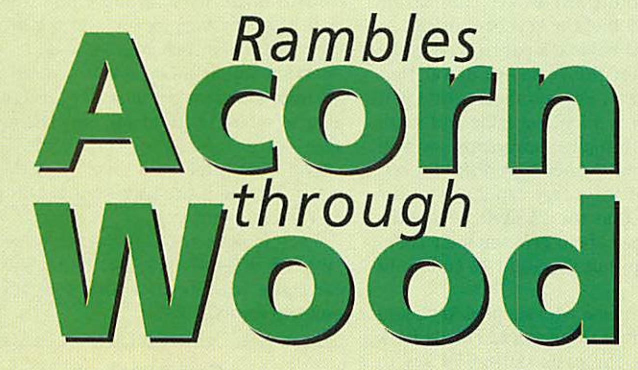
You needn't include a letter but please put your name, address and program title on every disc and include a text file containing your name, address, disc contents and program details. If you are responding to one of our challenges, please mark your envelope clearly with the name of the challenge. A SAE will ensure your discs are returned. *info submissions only please.

After December's apology for the failure of our e-mail forwarding system, we believed that it had been sorted out. Well, it turned out that it hadn't – it was working for a fortnight or so, but then failed again. We are happy to report that all forwarding has been disabled and we now collect our mail directly from the IDG server! The above address should now be working correctly. If you have sent an e-mail in the last six months and not had a reply, please resend it! Thank you for your patience.

Compatibility table

Program	ROS 2	ROS 3.1	ROS 3.5+
NetGames	No	Yes*	Yes*
Pattern	Yes	Yes	Yes
Pattern SA	Yes	Yes	Yes
BallPack	No	No	Yes
BalPack 27	No	Yes	Yes
HSV Petal 28	No	Yes	Yes
HSV Petals	No	Yes	Yes
SlowCoach	No	Yes	Yes
Greek 00	No	Yes	Yes
1L_Turbine	Yes	Yes	Yes
Turbine 1	Yes	Yes	Yes
Turbine 2	Yes	Yes	Yes
!Poker P	Yes	Yes	Yes
!Png2Spr	No	Yes**	Yes
DrawWood	No	Yes	Yes
Leaf	No	Yes	Yes
TxtMaze	Yes	Yes	Yes
TxtMaze2	Yes	Yes	Yes

* Needs two machines linked by the Internet stacks
** Needs Toolbox



Firstly, let me start with an apology to all of you who sent me an e-mail before November. I have just found out that my replies were being sent into some sort of Internet black hole and, although they were leaving my machine, they were never arriving.

As many of you will know, most of my past *Body Build* articles are available for downloading on the Internet. These were written for *The Micro User* and *Acorn Computing* from 1983 to 1994. Now that my back catalogue of *Run the Risc* articles for *Acorn User* is getting large, this issue sees number 36, I thought it would be useful if some of these were also available.

However, as the back issues of the magazine are available for about six or seven months I can only post articles older than that. So, this month, I have been gathering together the first 24. There are various components to an article – text, diagrams, software and screen dumps.

The text is a plain text file with no line breaks so that you can put it into your favourite word processor, or *Edit* and format it easily to your own needs. The diagrams are in TIFF format and can be easily handled by *ChangeFSI*, and the screen dumps are in sprite format. The software and the screen dumps are compressed using *Spark*. Each element of an article has its own icon after a short description – you are best saving the link rather than trying to get your Web browser to display it. All this can be found on, http://physics/mmu.ac.uk/Physics/Acorn/RTR.html – note that case is important.

I remember someone having a problem with file names when using Windows 95. While wandering around Acorn World '97 I noticed that Warm Silence Software have come up with a solution called *Win95FS* which will sort out those troublesome file names, it cost £35.

The next few items might be entitled PIC support, firstly Tony Abbey from the CCD Group, Dept. of Physics and Astronomy, University of Leicester, has been giving my assembler a workout and come up with a few errors that the application didn't catch. I won't detail them here but I have incorporated this into the latest version V1.4 which is on the cover disc.

A reader from Iceland, signing himself Icecube Ryder, has a request to make concerning the PIC blower, he writes:

I have an old A310 computer and therefore no bi-directional parallel port. I am currently building the RTR bi-directional Port emulator, but I would rather use the IIC port if I could. Is it possible to convert the PIC blower to IIC?

While you could use the IIC interface, there is absolutely no need to as the application will look at your hardware and if it is a single direction user port will load in the SWI emulators to enable the program to work. There is no need for any extra hardware as the only inputs are on the status bits.

Finally on this topic, Andrew Palka contacted me to say:

I've been using the PIC programmer software but I had a couple of problems with it (which I have fixed myself).

1) It usually failed to program correctly. It would read back data which was different from what it tried to program.

I think this is because it only waits one clock tick after starting the programming before trying to verify. If the next clock tick happens very soon after starting to program, it may try to read the data too soon. This can be fixed by waiting for two clock ticks, which guarantees a minimum of 10 milliseconds.

2) It is very slow.

I speeded it up by two things:

• Modifying the SYS calls to pass the appropriate integer value for the SWI, rather than a string. This avoids the need to lookup the string on every SYS.

• Changing the way that the percentage was displayed, so that it would only be updated when it had changed.

I don't know if you are interested in receiving problem reports and I can understand that you don't want to get involved in a lot of work supporting these programs!

Thanks for the information. On my StrongARM system it is not slow at all, but the measures you suggest will speed up a slow system. I have modified my original program to take these things into account and have placed it on the cover disc.

Some people write, others e-mail, but Dave Stratford came up to me at Acorn World with his problem on disc. He was writing a program to display a randomly chosen JPEG image as a background and was using *ChangeFSI* as a library function. The problem was that it worked on some image files but not on others. When it failed it came up with the message 'Unknown or missing variable'. While the eventual solution was simple enough, I thought you might like to know how I set about solving it.

Firstly, I made a copy of the BASIC portion of the *ChangeFSI* application in the directory I was working in and changed the reference in the program to load in my copy. Then I edited it by REMing out all the ON ERROR lines. Finally I dropped into BASIC from the desktop with an F12 and `*BASIC` ran the program. Now when it crashed the error message pointed to the offending line. There was only one variable on it, but if there were more then all I would have had to do was to type PRINT variable for each of them until the computer objected. What I found was that *ChangeFSI* wanted a variable called task% in an IF statement. So all Dave had to do was incorporate

```
task%=FALSE
```

into his program and it worked. However, I don't know why it didn't always need this variable.

Next up, Charles Hope, from West Horsle writes to inform me:

I have seen you comment about RDS in November's Acorn Wood and I suspect you are a bit out-of-date. I agree that most radios sold in the UK with RDS are for the car and don't give much more detail than station name. However, I have just bought a Hi-fi tuner/amplifier (receiver) with RDS. This gives me the scrolling info which, on R3 at least, tells me the piece being played most of the time but sometimes only the name of the programme.

On Radios 1, 2 and 4 it gives programme title. No messages on Classic FM! It also tells me the time in case I can't read it off Ceefax. The other advantage of my particular receiver is that it can provide traffic information. This mode, if selected, will switch you away from any BBC programme to a BBC Radio local station when travel info is being carried. This can be very useful before setting out on a journey so that you get an idea of which hold-ups to avoid.

Thanks for that update. It seems it could be useful having RDS on a fixed receiver after all, unfortunately the fact remains that it is still not possible to modify the radio card I used to receive it.

Shawn Pearson from the University of Cambridge Local Examinations Syndicate is having a problem with Acorn users on his website:

Many of the visitors, and potential visitors, to our site (www.ucles.org.uk) use Acorn PCs. On our site, we wish to make more documents, such as syllabus booklets, available for visitors to download. Which format would you say would be the most convenient for users of Acorn PCs? At the moment we supply documents in Microsoft *Word* and PDF formats, both of which, I believe, are inappropriate for Acorn users.

Well actually the PDF format can be read on Acorn machines if you have the appropriate reader, and there is a PD one that has appeared on a few utility discs and is freely downloadable. The only caveat is that it can't cope with encrypted PDF formats and the author says this is due to 'spurious US export restrictions'. This is strange as all my PC and Mac applications can read encrypted files. Some people seem to confuse ➤

Rambles Acorn through Wood

➤ encryption with compression, so there are quite a few needlessly encrypted files floating about.

The great advantage of the PDF format is that it allows a mixture of text and graphics just like a book but does not require the reader to purchase any software. You could use *Impression* but that would disenfranchise the many users of Acorn machines that do not have that facility. Therefore the only true universal format is a plain text file but that would lose your fancy layout and fonts.

Samantha Coupe is looking for a way to get access to clip movies, she writes:

Please could you tell me if there are any packages available which will convert *Quicktime* movies to a format that can be used on Acorn? If not, can you suggest any other formats which are uniform across Mac, Win95 and Acorn (excluding MPEG).

MovieFS from Warm Silence Software will allow you to play *Quicktime* movies on the Acorn. It will even translate them into *Replay* movies, but you need to have the codec (the decompression software) in the playing machine and you can't distribute that. It can also cope with AVI (Video for Windows), FLI/FLC (Animator Pro), AIFF, WAVE, VOC and ANM – mind you, some of those are sound samples.

It works in such a way that any replay compliant program like *Genesis* or *Empire* can use these formats. They also do another one called *VRview*, which will allow you to cope with *Quicktime Virtual Reality* movies. These are movies where you are in control of what is seen, allowing you to pan and tilt through 360 degrees.

Keith Wright has some old hardware and hence a problem:

I am a teacher in a school in Denmark (a town in Western Australia). We recently had a donation of a Valiant Turtle from a business we deal with. Since I use *LOGO* with some of my classes I thought it would be great to use it with them in some "real robotics" activities. Alas, the software provided to drive the turtle does not work with the A3000, RISC OS 3 machines I am trying to use it with. When the *LOGO* software tries to communicate to the turtle the computer freezes (although pen up and pen down do work). The company I deal with haven't been able to help – can you?

I am not sure what computer your turtle was originally designed for, but as the pen up and down works you must be nearly there. I am not even sure how this connects up to your computer, serial, printer or user port? Has anyone got any more information on this?

Peter Harris is in terminal decay with his hard drive, he writes:

I have a few questions about my A440's hard disc. It's a 50Mb disc, over five years old, and recently it's been causing errors when loading files. *verify often yields some bad blocks, but not always the same ones. I have used *defect to mark several of them, but I fear that it's an ongoing problem. So, is this likely to be helped by reformatting the disc? Also, if I want to replace it with an external SCSI disc, using a SCSI card such as the Storm 16 from Castle technology, will the machine be able to boot from the external drive? I am loathe to buy a replacement internal drive unless it is also going to be usable in whatever Risc PC I eventually buy.

Reformatting the disc is likely to help, but any signs of decay like this should start ringing alarm bells for you to back up everything you can and get a replacement. Your best bet is to use a SCSI card, (see last month's review of the current crop). The firmware drivers on board these mean that you can boot up from a disc fitted this way and a modern card will be usable on the latest machines.

Maurice Hendrix wants some advice about keyboards:

I've been struggling with a little problem ever since I got my Risc PC. On setting it up I discovered that (in all their wisdom) Acorn had supplied me with a UK-style keyboard. You know the ones with the @ and # signs to the right of the keyboard and the | and \ to the left. At work and every other computer (even my trusty A5000) I've seen uses a US-style keyboard, where the @ is above the 2; the # is above the 3 and the \ and | are on one key above the Enter key at the right of the keyboard. I asked my supplier and they told me that all Risc PCs where supplied with this keyboard.

I really would like to have a US-style keyboard for my Risc PC but my dealer says he doesn't know how I can. In the PRM however I read that any PS/2 keyboard may be connected, however I have this funny feeling in my stomach that keeps me from going to a PC shop to get a "normal" keyboard.

I'm hesitant to spend the money without knowing "for a fact" that it will work on my Risc PC. Until now no-one has been able to tell me whether a US-style PS/2 keyboard will work on a Risc PC and/or whether I may need a different keyboard driver. (The PRMs are remarkably silent on this subject) to get it to work. If I do need another keyboard driver, who supplies them?

The Risc PC can handle any PC-AT compatible keyboard, that's the job of the keyboard driver. As explained in the PRM volume 5 page 137, it is the keyboard handler not the keyboard driver that translates the low level key numbers into ASCII format. Essentially it is a look-up table and small amount of code. With foreign keyboards you will find that the labels on the key tops differ for certain key codes – it is these that can give you the trouble. It is likely that the US style keyboards with just keys swapped about give the same codes for the same key tops but you can't be sure until you try it.

I don't know of anyone who supplies keyboard handlers – it's the sort of thing you can easily hack yourself if you have the basic skills. The key to this is on page 914 of volume 1 of the PRM, it describes OS_InstallKeyHandler. From it you can get the address of the current handler and read in the code. Then you can modify the bits of the look-up table that you need to and then install the new handler with the same call.

Sorry, but the name has become separated from this problem:

I have a Risc PC 600 computer and an AKF 85 Acorn monitor. Up until 1996 all the *Acorn User* discs worked perfectly, until *!Saviour* by Jonathan Rawle, in January 1997 (which may be a coincidence). *Saviour* worked perfectly for about two months, then I noticed that when I temporarily left my computer it blanked out two-thirds of the random image which had moved to the right and one-third to the left, with an extra kind of blacked-out column towards the left. Wavy lines appearing over most of the screen were also evident.

Since then many of the *info patterns have done roughly the same thing. I have discovered, that if I alter most of the problem patterns to mode 28 they will work perfectly. Have I therefore found out how to cure the problem, but not why it happens? Unfortunately, the Mona Lisa in *Poodle* will not correct itself if I change it from Mode 13 to 28. How would it be possible to alter one that had two Modes, say 11 and 13?

Having checked previous month's discs, I found that those patterns that had worked in the past now have the same fault. The boot system is the same as the original set-up, so nothing has been altered there. Have you got any idea what could have caused this problem? Writing text is perfect. Why is it that my computer would previously operate any of the monthly discs perfectly before 1996, irrespective of modes, but with no apparent reason suddenly stopped doing so? I would be most delighted if you could solve it for me.

This sounds to me like the video map has been altered. This controls the relationship between computer hardware memory addresses and the resulting pixel position on the screen. Many of the graphics demos in *info access memory directly and expect a standard memory map. It is likely that this could be restored by holding down the delete key when turning the machine on. This resets the COMS RAM which holds some of the mapping information.

Finally if you think you've got problems here's something that was e-mailed to me the other day: There were three IT professionals – a project manager, software developer and hardware engineer – driving in the mountains. Suddenly, on a steep down gradient, the brakes fail. They career out of control until, by scraping along the mountain wall, they manage to come to a halt. Gathering their senses, they debate what to do.

"What we should do is have a meeting, define a mission statement, set objectives and then create a plan to solve the problem", says the project manager.

"No, that'll take too long," says the hardware man. "I'll patch the leak with chewing gum and we can carry on."

They look to the software man for his input: "What I suggest". says he, "is that we push the car back up the hill and see if the problem recurs." AU

Contacting me

You can contact me, Mike Cook, by post at the usual address or by e-mail at: auqanda@idg.co.uk

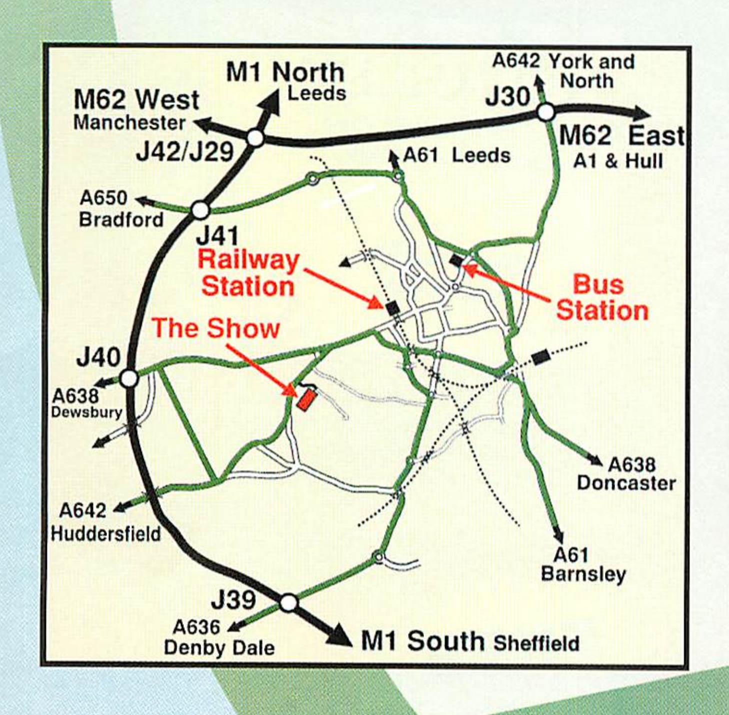


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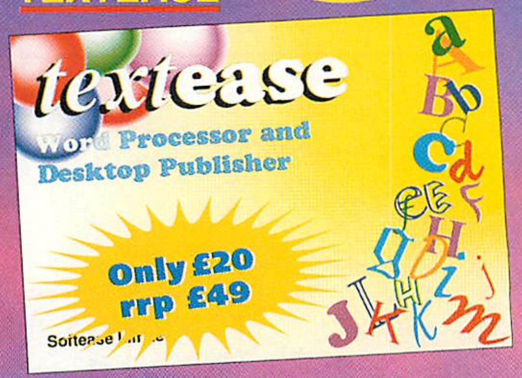
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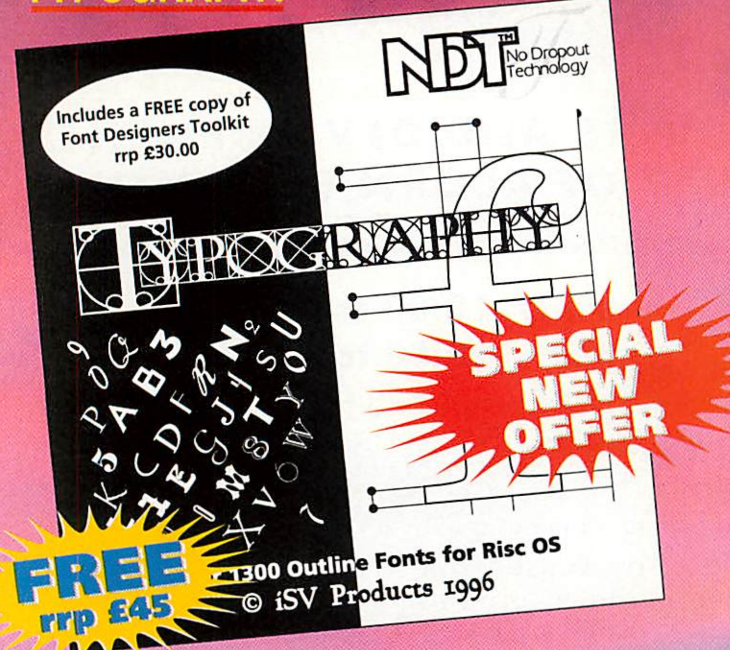
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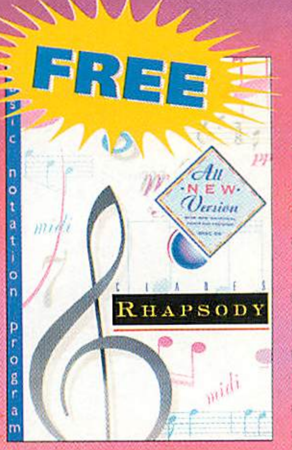
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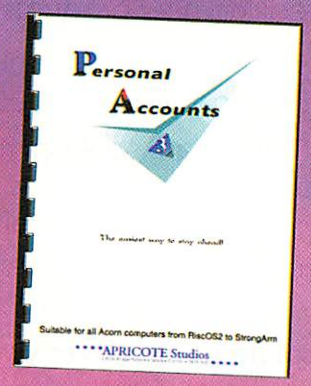


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A view from above

Part 3 of **Mike Cook**'s series on decoding satellite images

I do seem to come at projects backwards. After looking at how to process a satellite signal in hard and then software over the last two months, I am now going to look at how to receive the signal in the first place.

You have two basic requirements for satellite reception – a radio and an aerial, neither of which need be complex. As we saw last month, the satellite image is transmitted as an amplitude modulated (AM) signal on an audio carrier. However this audio signal is transmitted from the satellite as a frequency modulated (FM) signal in the 137MHz frequency band, many multi-band scanners cover this range.

With modern components it is quite easy to make a radio which operates at this frequency but there is a snag – over the last few years the previous government allowed pager transmitters to use this band, despite the international agreement that it should be reserved for satellites. This means that there is often a powerful transmitter close to the satellite's frequency which causes what is called 'breakthrough' interference. Anyone living next door to a taxi firm will know what I mean.

The problem is further aggravated by the fact that the satellite's transmitter is of quite low power, normally five watts. This is just enough power to light a torch bulb and, because of the satellite's distance, the resulting signal is not very strong. Therefore, any radio receiver has to have the twin attributes of being very sensitive as well as very selective. Older, simpler designs are simply not good enough nowadays. I have a complete system from Feedback Instruments at my University, bought about 10 years ago, it gave perfect results then but is now useless due to interference. So bear these points in mind when selecting a receiver.

I decided not to design my own receiver but to look at two commercial alternatives. The first is the do-it-yourself approach, with a kit of parts being available from RIG, the Remote Imaging Group. It is featured in the January '98 issue of their journal and a kit of parts is available to members for about £60. One interesting feature is that it uses a PIC controller, although at the time of writing I have not yet seen the final design.



MSR50 shows little in the way of front panel controls

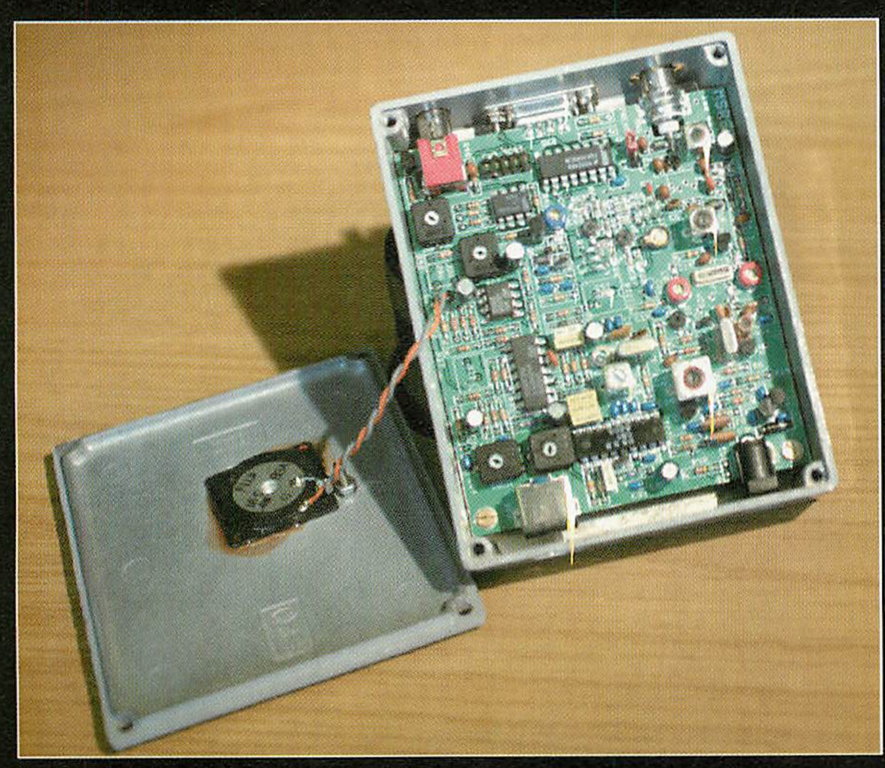
For those of you less confident in constructing electronics at these frequencies, there is a commercial alternative. This is the MSR50 virtual satellite receiver made by Martelec. This is novel in that most of the receiver's function is controlled by a computer but, as you might guess, there is no Acorn software, only PC or Amiga. The PC software will work on the 486 card in a Risc PC but I decided to write some native Acorn software.

In stark contrast to the situation last year when I interfaced an FM radio intended for the PC, Martelec were most helpful in telling me what signals were needed to drive the receiver. Basically it is a three wire serial system, data, clock and latch, using a 24 or 27 bit word. In addition, the receiver has two digital outputs, one indicating the reception of a signal and the other indicating whether it is off tune high or low. This can allow you to automatically track the satellite as its frequency changes due to Doppler shift. However, I found this was not needed in practice and so did not do anything with this signal. The other difficulty is that being only a single bit, it indicates high or low but not when you are on tune.

The receiver's frequency is controlled by several programmable dividers. The value in the reference divider is determined by the reference crystal frequency (102.45 MHz) divided by the desired tuning step size (2.5 KHz), in this case this gives a value of 4098. This must be set up once on power-up. The programmable divider controls the tuning and is split into two segments, 11 bits programmable and 7 bits swallow – that's a new one on me as well!

As an example, suppose we want to tune to 137.5MHz, the frequency of the local oscillator must be this plus the frequency of the IF or intermediate frequency. In this receiver the IF is 164.925MHz so this gives a local oscillator frequency of 302.425MHz. The value needed to put into the programmable divider is given by this frequency divided by the prescaler value of 64 and then by size of the tuning step, in this example it works out as 1890.15625. The integer part ➤

A view from above



The inside of the MSR50 reveals a good build quality

is placed into the 11 bit counter and the remainder is multiplied by 64 and placed in the 7 bit swallow counter.

After these counter bits is a single bit which indicates whether the number is being placed in the reference or programmable counter. Finally, there are 8 bits tagged on the end that are used to switch the receiver if it is being used as an IF module for a geostationary setup, we are not interested in this here. After all the bits have been put on the data line in turn and the clock signal pulsed for each bit, the latch signal is pulsed to load it all into the internal registers.

There is a bit of a snag. I wrote the first program to use the printer port as there was a cable supplied with the receiver and that's how it works on the PC side. However, the image decoder electronics will also need to use this port, so I have written two alternative applications that use the IIC Port and a User Port. For this last one I have used the standard calls so it should work on anyone's user port. All three versions are on the cover disc. You will need to make up the appropriate cable – the information in Table 1 will allow you to do it.

Table 1: Computer/Receiver cable information

Signal	MSR50	User Port 9 pin D type	Printer Port or IIC
Data	2	0	D0 (2)
Clock	3	1	D1 (3)
Latch	1	2	D2 (4)
Hi/Lo	4	6	S5 (12)
Signal	5	7	S4 (13)
Earth	7&8	E	E (25)

Next comes the problem of the aerial, and I really could devote a whole article to this. The simplest aerial is a crossed dipole, Maplins do sell a low price kit which I have. However, I was able to test it on a very expensive piece of kit called a network analyser that we have at the University and it was sadly lacking.

There are alternatives both in design and supplier and this is an area where the DIY ethic can still rule the day. In the March '97 issue of the Remote Imaging Group's journal, there are articles describing both Lindenblad and Quadrafilar helical aerials. The advantages of these is that they give better reception, especially towards the horizon. All these aerials are omnidirectional which means that there is no need to steer them to track the satellite, unlike the case when you want to receive the high resolution data.

Finally there is the question of when to expect a satellite pass. There are daily tables in the RIG journal and I have found them to be most reliable. With a computer you can compile your own or even have a map of the world with the current position of each satellite drawn on. There are many of these for the PC side but I only know of one on the Acorn side, it is called Spotter and can be found in many PD libraries and online stores.

Unfortunately, the licensing conditions prevent me from putting it on the cover disc (as well as the editor, he tells me there is not enough room). If you do have difficulty tracking it down, let me know.

The only snag with using a computer program is that you need to feed it with fresh orbital parameters at least every three months or so. These ensure the accuracy of predictions and can be tracked down on the Internet for most satellites, not just the weather ones. This data is known as Kepler Elements or NASA two line elements.

So now you have all the information you need to snag those images from above. See you next month for something with a bit of a kick.

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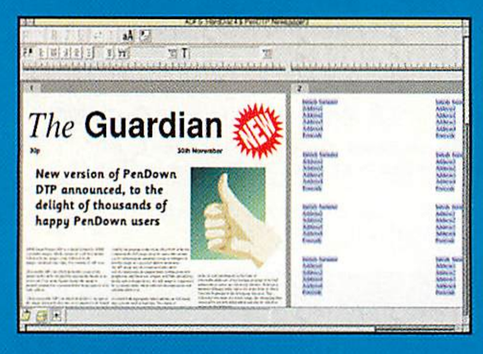
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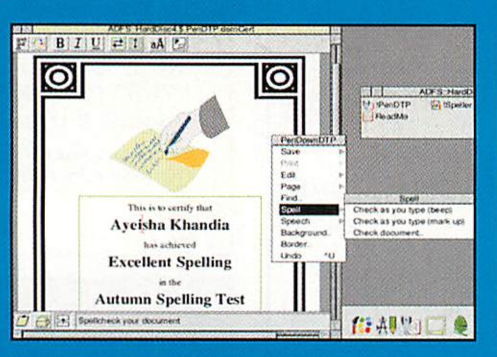
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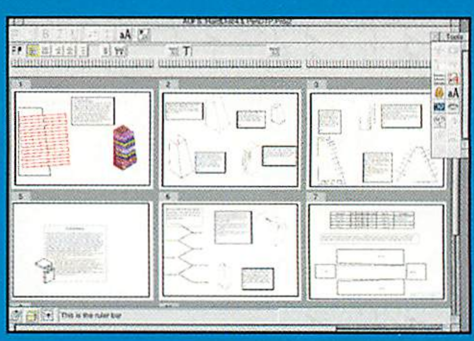
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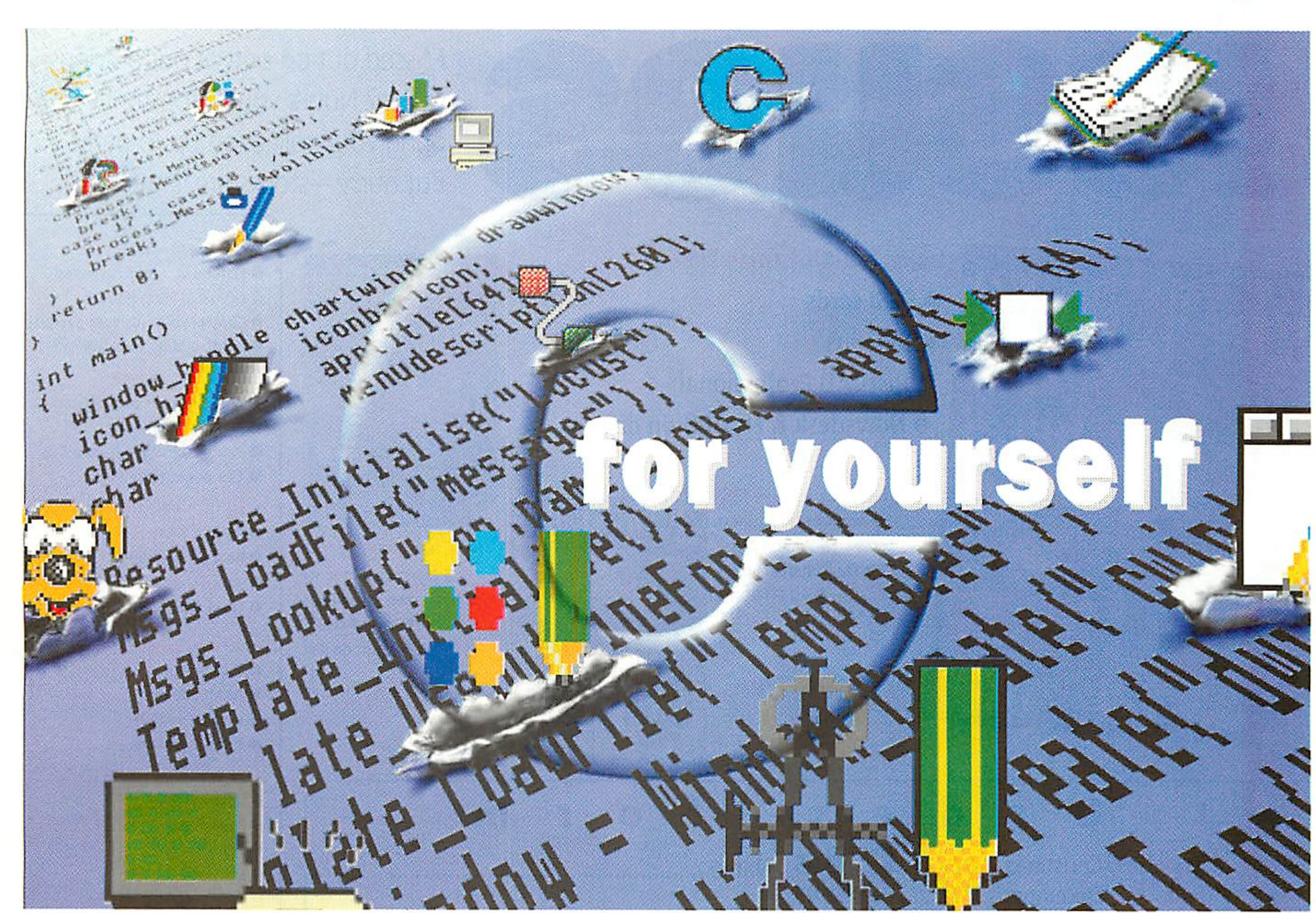
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Steve Mumford continues his overview of the printing process

Following on from last month's instalment, here's a closer look at the message passing protocol that must take place when printing from within the WIMP. This 'red tape' is necessary to avoid conflicts between applications as they try to share resources, as well as providing a method of extending the WIMP's functionality without changing the user interface.

The printing protocol

In order to check whether Acorn's *Printers* application has been loaded, the program must send a message to all the active tasks running in the WIMP and hope that the printer manager responds to your call. This is done by using **Wimp_SendMessage** to broadcast a **Message_PrintSave** using a format similar to the one shown below:

```
#define Message_PrintFile 0x80140
#define Message_PrintSave 0x80142
#define Message_PrintTypeOdd 0x80145
#define Message_PrintTypeKnown 0x80146
unsigned char msg_block[256];
_kernel_swi_regs in, out;
au_wordtobyte(256, msg_block, 0); /* size
of message block */
au_wordtobyte(0, msg_block, 4);
au_wordtobyte(0, msg_block, 8);
au_wordtobyte(0, msg_block, 12); /* this
is an original message */
au_wordtobyte(Message_PrintSave,
msg_block, 16);
au_wordtobyte(0xff4, msg_block, 40); /*
filetype */
in.r[0] = 18; /* User Message Recorded */
in.r[1] = (int) msg_block;
in.r[2] = 0;
_kernel_swi(Wimp_SendMessage, &in, &out);
```

Setting R2 to zero indicates to the WIMP that this message is to be distributed to all currently active tasks, and storing 18 in R0 gives it the type **User_Message_Recorded** – in this case, if no other tasks reply to the message, the process that sent it is informed and given a copy back with a **Wimp_Poll** event code of 19. Assuming that the printer driver is present and all is well, your task will receive a **Message_PrintFile** in reply.

Although RISC OS 2 handled this stage slightly differently, with RISC OS 3 we just ignore that announcement and wait for **Message_PrintTypeOdd** to be sent to our application. This message is sent out whenever *Printers* is given a file to print that it doesn't recognise, so we have to check that our program was actually trying to print something before replying to it with **Message_PrintTypeKnown**. At this stage, the protocol is complete and we can now concentrate on preparing the output.

Printer options and page sizes

Once you've determined that the *Printers* application has been loaded, the active printer driver can be queried to reveal its current capabilities, from the available *x* and *y* resolutions to the dimensions of the printable area of the paper. These details are commonly used to customise dialogue boxes and display absolute printing boundaries on screen, enabling the user to predict fairly accurately what will and won't appear on the page.

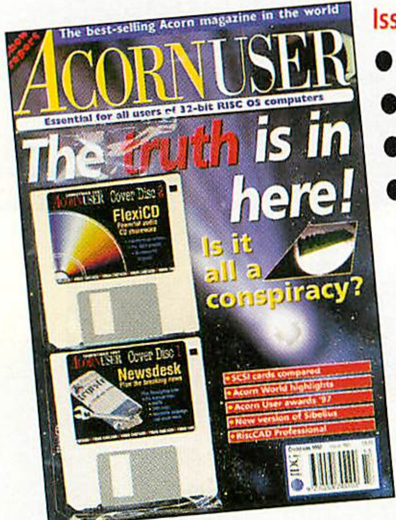
The two SWI calls which provide these details are **PDriver_Info** and **PDriver_PageSize**. Both are called with an empty set of registers; no parameters are necessary. On return, the registers contain all the information relevant to the currently selected printer driver – **PDriver_PageSize** is the simpler of the two and returns the full *x* and *y* dimensions of the page in millipoints in registers 1 and 2. These are followed in registers 3 to 6 by the distances to the left, bottom, right and top edges of the printable region of the paper as measured from the bottom left corner.

PDriver_Info is a little more complicated but it supplies the programmer with a large amount of information. R0 is split and holds the printer driver's version number (multiplied by 100 to convert it to an integer) in bits 0 to 15, storing another integer in bits 16-31 to indicate the type of the printer. For instance, the number 0 indicates a PostScript printer, 2 means you're talking to an HP LaserJet or compatible, and the number 4 represents a fax modem. R1 and R2 hold the *x* and *y* resolutions of the printer in question, R5 and R6 store halftone resolutions if used, and R4 points to a string giving the printer's name (a maximum of 20 characters in length including the null termination byte).

R3 holds a series of bits that indicate the printer's capabilities quite precisely – looking at the value of these bits would allow you to determine how many colours were available, whether it can handle colour overwriting and so on. These values are useful in allowing the programmer to change the plotting method to make best use of the printer's facilities – for instance, attempting to plot a sprite on a pen plotter isn't going to get you very far. We'll make use of these next time. AU

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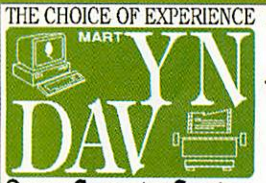
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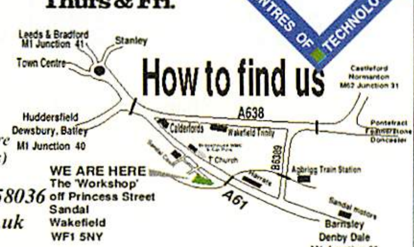
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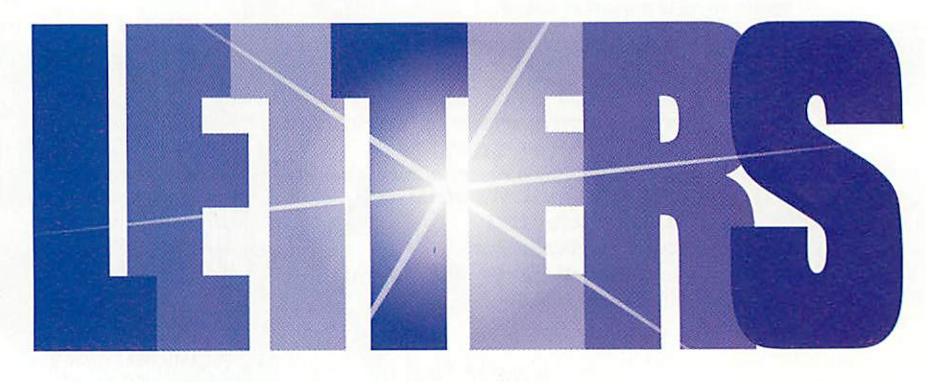
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Java & Microsoft & GIFs

I have a couple of comments to make about some of the articles in the December 1997 issue of *Acorn User*.

Java

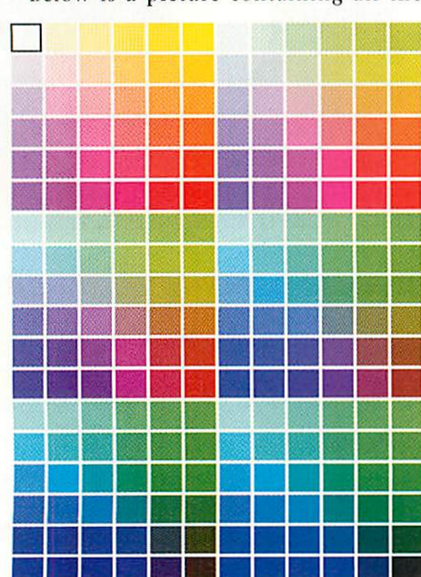
This is a word of caution. I hope your readers are aware of the current legal wrangling going on in the USA between Sun and Microsoft over the latter's implementation of Java in Internet Explorer 4 and the latest Software Development Kit (SDK). Sun are suing Microsoft for various reasons over this, including breach of contract and misleading developers. More on this can be found on the Sun site: http://www.sun.com

So, what is the problem? Sun allege that Microsoft have tampered with files that they should not have. One of the main problems is that Sun claim that code developed on the latest SDK from Microsoft will only function on IE4, and that code developed on any other Java SDK will not function in this browser. This, of course, undermines the cross-platform portability of Java and causes problems for developers. Do they create code that is supported only by one browser, or do they ignore IE4 and support everyone else?

GIFs

Again, an interesting article on creating Web graphics, but Simon Kiff hasn't mentioned that a specific palette of 216 colours is regarded as "safe" for Web browsers. Not all computers in 256 colour mode will display the Acorn 256 palette correctly. The majority of browsers are not on Acorn machines, and if you want your website to look its best on all machines, it is a good idea to use these colours in your creations.

Below is a picture containing all the



"Netsafe" colours. I supplied this as a GIF to ensure that the colours are maintained. These colours should be referenced in any GIF creation to ensure that the graphics will display correctly on all browsers. In pictures, GIFs are generally dithered to make up for the loss of colours. The picture below shows how dithering can adversely affect the impact of a graphic. This was grabbed from a 256 colour display Mac running Netscape



"Netsafe" Colours

LOGO

Unsafe Colours

Navigator. The yellow looks decidedly dull.

I have also attached a text file with a hex listing of all the colours in the "6-6-6" Netscape Palette. These can be used in HTML for defining background, text and link colours. Again, these colours will display correctly in Mac and PC browsers. All hex values in HTML should be proceeded by a hash character (#) rather than the funky ampersand (&) that we have all grown to love.

Paul Dunning
Pauld@ebert.demon.co.uk

Paul's files will be on the next cover disc.

Extended warranties

Over the last two years there has been a lot of letters in *Acorn User* about the financial position of Acorn, which now appears, thank goodness, to be improving. I have a StrongARM Risc PC, complete with 32Mb RAM, 2Mb VRAM & 3.5Gb IDE HD, plus CD drive and a CJE586-133 PC card, all running extremely well at the moment.

As any reader can appreciate, the overall cost of my PC and extra hardware together with access to the Internet does not come cheap. Let alone all the software one accumulates. I now see, through ads, that we can purchase extended warranty for up to five years. For my particular Risc PC, this would cost me £470. Is this a reasonable price? I know this reflects prices in the PC market over a year ago.

However, I now see in competitive advertisements in, for example, *PC Advisor*, that most manufacturers now give two to five years free warranty and some even a lifetime free warranty. This I believe will deter yet more potential Acorn customers who may buy other machines if Acorn do not act positively with the competition.

Although a loyal fan of Acorn machines for many years, I would like to ask Acorn in today's competitive market place to justify the prices of an extended warranty? My local Trading Standards state that any contract to do with warranty lies firmly with the person who has sold me the equipment!

I believe it would be in Acorn's future sales interest to give a five year free warranty, thus compelling newcomers to Acorn machines. Interestingly, a recent statement in December's *PC Advisor*, (another IDG Media publication) states 'that the Consumers Association advises you think about the value for money offered by extended warranty – it is likely to be expensive compared with the amount you would, in normal circumstances, pay in repair costs'.

Howard Cutler

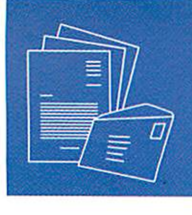
!ShareHolder year 2000 bugs

Have any users of *!ShareHolder* from Silicon Vision tried to test whether it will work after 1/1/2000? I have found that it will not accept dates entered manually beyond 31/12/99. In other words, dividend and purchase dates. It reverts to 1968.

Oddly enough, when the computer's date is at 2000 it will accept the actual day of entry date, by just pressing return in the date field. But any other 2000 date is not accepted. I have tried repeatedly to contact Silicon Vision, but they never return my calls – they operate through an answering service.

Anyone got any helpful solutions?

Harry Bradley
hbradley@argonet.co.uk



Asic 3 and beyond

Some time ago (May '95) you included an extract of a letter of mine in your letters page. The extract was a tongue-in-cheek look at how the Pentium would revolutionise the portable office by providing a fan heater on a chip.

The remainder of the letter dealt with the superior design of the ARM which meant it had much greater superscalar potential than other CPUs. I think the forthcoming December press release about ASIC 3 (revealed at the Chris and Peter Show) will describe it as a superscalar chip.

According to IBM and Motorola, the limit to superscalar technology is the number of instructions between **conditional** branches because, if you choose the wrong route, you have to flush out the processor. In normal compiled code, say for a Pentium or PowerPC, this averages out to a measly six. In ARM code, however, **every instruction** is conditional so there is not so much need to jump around. Obviously, I am not in a position to carry out a detailed analysis of compiled ARM code but examination of some stuff I produced with *!Easy C* extends this limit to a rather more substantial 18. My guess (and it is no more than a guess) is that ASIC 3 has about half that many execution units.

Assuming Intel don't stop the party, my next prediction is the 64-bit LongARM (obvious name really) which will be fully compatible with the 32-bit StrongARM. Once again, the ARM design is sufficiently elegant to make this a doddle, simply by pretending the 64-bit instructions belong to a co-processor.

Oh, and another thing. Anyone who reads *BYTE* magazine might remember a little article about those nice people at CERN (they gave us HTML) who have been investigating parallel processing. They have concluded that there is no need for specially designed processors. The most effective method of sharing the load is message passing, and there is no fall off in efficiency as the number of chips goes up.

The chap on the Acorn stand at Acorn World who described the new computer to me used those very words (message passing) when he described how the processors would interact.

So, in the not too distant future, we can look forward to seeing an Acorn computer with a large number of 64-bit ARM CPUs, each of which will be capable of 10,000 MIPS, in a just a few years time. Then, at last, we'll get some decent games!

L.J. Dundon
lesdundon@argonet.co.uk

Dear Tony...

I have just read yet another article about our friend (sic) Bill Gates and his discussions with Tony Blair, about connecting all school children to the Net by the year whatever. As Acorn enthusiasts we surely cannot let this go without a fight. I suggest that we must all e-mail, snail mail or whatever Downing Street to tell them that there is a British alternative to WinTel, fully capable, given the government resources of providing Internet connection either through Acorn or Xemplar.

By the way, what is the e-mail address for Downing St?

David Lally
david@dclally.demon.co.uk

Show time

I attended the recent Scottish Acorn Computer Show in Glasgow and found it a very enjoyable experience. I feel it's important that these regional shows are held as not everyone can easily travel to London.

I came away with *ImageFS2* and *PCPro* at show discount prices – well worth the trip. Hopefully all the exhibitors found it financially worthwhile attending as well.

Bill Swanston
wlswanston@compuserve.com

Procrastination!

No matter what people tell you, Acorn's future is far from bright and cheerful. If you want to know its life expectancy, I would vaguely guess it's in single figures. What will cause this death? Quite simply, the failure lies within themselves.

In the end, the PC may well completely swamp every area of computer industry as it claims new territory daily. But the true fault lies in Acorn themselves, they are the ones who have signed their own death warrant and they are the ones who will pay the price for their lack of insight.

Honestly, I do not understand the mentality of the people behind the driving seat. I accept that Acorn cannot afford to advertise on the same level as PC; they don't have the money. In the past, most of the advertising was successfully carried out by word of mouth. Acorn dealers were able to communicate to people on a personal level. My Acorn dealer informs me that Acorn were responsible for getting rid of over 300 dealers in one stroke!

That's bad enough, but it gets worse. The small dealers are just not able to make enough profit from selling Acorn Computers when their prices are constantly being undercut. The average small Acorn dealer can hope for an eight per cent profit on selling a RISC OS PC.

By neglecting the smaller businesses, Acorn are removing their own foundations. Their own dealers are turning to PC goods and computers to survive, no matter how loyal they are to Acorn and how much they dislike the PC system. To put things in perspective, Acorn's work is impressive – cutting edge technology. But too little effort is directed into targeting the public, a task which was accomplished by the many small dealers. Whatever the Acorn press are publishing, the facts are simple – Acorn will not survive unless somebody rouses them from their self-induced coma. Problems must be addressed soon or there may not be an Acorn for very long, and that would be one of the greatest losses imaginable to the computer world.

William Simpson
Lincoln

Any attempt to directly compete with PCs is inherently doomed to failure, Commodore and Atari tried that against the games consoles, and where are they now?

Acorn must rely on the increasing use of ARM chips in, well, just about anything and sales of their technology to corporates until it becomes even more pervasive than the PC.

Meanwhile, the success of Microsoft is attracting the kind of attention any ridiculously successful company acquires, the kind that is trying to tear it down. Bill Gates' PR team aren't doing a very good job and it's going to cost them.

There are many persuasive reasons for using Acorn machines, but the most effective will only appear later when the Acorn/ARM combination has wormed its way into so many products you won't be able to keep track: "Why buy an Acorn machine? Because you're already using one."

Air your views

If there's something you want to 'get off your chest' or you have some interesting information for your fellow *Acorn User* readers, then write in to:

Letters page, Acorn User, Media House, Adlington Park, Macclesfield, SK10 4NP or e-mail: auletters@idg.co.uk

Please note that we cannot guarantee a personal reply to individual letters.





When I first heard about the program *HolyBible* I envisaged a scene similar to the one at the end of *Raiders of the Lost Ark* when the anonymously-boxed Ark of the Covenant is being put into storage in a vast warehouse. I imagine a warehouse like this containing row upon row of computers with a person sitting at each, entering data for an encyclopedic bible program.

Actually, *HolyBible* is the work of Martin Wüerthner from near Stuttgart. Martin came up with the idea and the first version of *HolyBible*, although recently he's better known to many as the author of a number of add-on tools for *ArtWorks*.

'*HolyBible* was really my second phase of programming,' explains Martin. 'You see I am a Christian. I really liked the idea of using the power of the Acorn computer to help me study the Bible. I wanted something which would help with searching, cross-referencing and that sort of stuff. So I wrote a Bible application. I went to the Acorn roadshow in Munich and met Bob Coates, Acorn's international manager at the time. He said I should see Paul Richardson from ExpLAN.'

Martin eventually met Paul at Acorn World 1993 and they decided to continue the project, re-designing it and revising a couple of times. In its present form, it is available with Bible versions in several languages. You have to admire the programming with its ability to handle such a vast amount of text.

'The size of the Bible itself is not a problem', enthuses Martin. 'What else could be better to handle such large amounts of data than an Acorn computer? Publishing *is* electronic these days. We were able to licence the best Bible text we could find. These electronic Bible texts have internal format codes for imagesetting'.

Martin cut his programming teeth in 1983 on a Sinclair Spectrum. His first 'serious' programming was on an A3000 which he bought after seeing good reviews in German magazines. It boiled down to the fact it was a brilliant computer, and at the time *no-one* would buy a PC in Germany – perhaps an Amiga.

'After the obligatory fractal programming I did a mouse recorder – a program which recorded your mouse movements. I took it to a computer show in Stuttgart and showed it to Gordon Taylor. He was absolutely delighted (especially because Acorn had said that it was not possible). This was back in 1992 and Klein Computers distributed it.'

> **'Suddenly dozens of people wanted to register'**

All Martin's programming has been done in his spare time for 'fun'. For the past six years he had been doing a degree in Computer Science. He finished his thesis – *The Implementation of a new Object-Oriented Language* – handing it in on a Thursday at 2pm. Then, at 4pm, rather than propping up the local student bar, he took the train to the airport and flew to London for the Acorn World show.

Lately Martin has been extending the abilities of a program now neglected by the company that initially wrote it: *ArtWorks*.

'I was very excited when I heard that *ArtWorks* was modular. In '93 I got the Software Developer's Kit. I'm not sure how many were sold in the end, but I got one of the first copies. It is a brilliant system and a good interface.

'I had to fix various parts. I first started writing a module in 1993, but I found a technical problem which Computer Concepts could not fix, so I left the project and restarted in Autumn 1996. I fixed the problem this time and thought it may be a good idea to do a free module – I had not anticipated doing a commercial one.

'I thought doing the first free *ArtWorks* plug-in module was a good challenge. When I brought out *Polygon* people were so enthusiastic that I decided to make it Shareware. But not many people were prepared to pay.'

'So when I wrote *Intersect*, I said that if you register for *Polygon* you got *Intersect* free, and that this was the only way to get it. Suddenly dozens of people wanted to register. Then I did the *Hatch* tool, which was very exciting because I was not sure I would manage to do this. After some time it turned out that it was possible, and it worked in the end, so I decided to make this one commercial.'

The reason for Martin doing these tools? Simply that he had written to CC asking them to do these features. They are the ones he had wanted himself in *ArtWorks*. He has more suggestions than he could ever write; when another one captures his imagination that is feasible he will do it.

Jill Regan AU

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Picture by Walter Briggs using Studio24Pro

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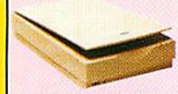
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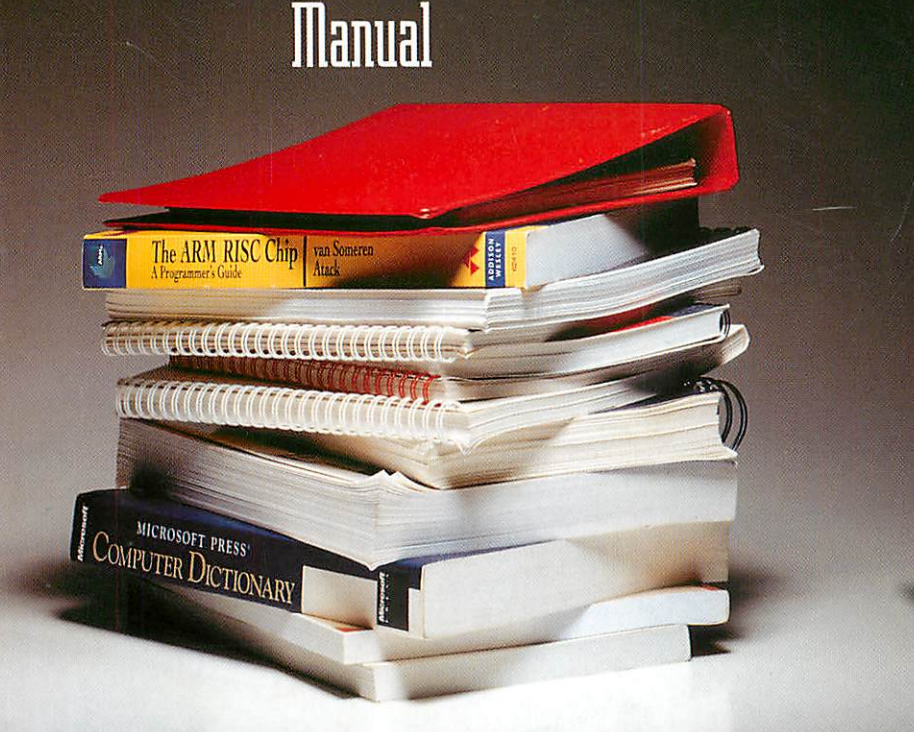
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